Interdisciplinary Investigations of the Boott Mills Lowell, Massachusetts

Volume I: Life at the Boarding Houses

Cultural Resources Management Study No. 18

Division of Cultural Resources
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INTERDISCIPLINARY INVESTIGATIONS OF THE BOOTT MILLS LOWELL, MASSACHUSETTS

VOLUME I: LIFE AT THE BOARDING HOUSES A PRELIMINARY REPORT

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

PREFACE

The establishment and growth of Lowell, Massachusetts, during the 19th century was but a part of a much larger drama that was to transform the western world and pave the way for modern society. Two of the major forces that were to shape this transformation were industrialization and urbanization. Prior to 1800, 5.1% of the United States population lived in urban communities (Lampard 1985: 199). By 1850 this figure had more than tripled, and by 1900 close to 40% of all Americans were living in urban communities (Lampard 1985: 199). This move to the cities was felt in Europe as well, where the rise of mechanized industry had been in progress since the late 18th century. While only players in this broader performance, the founders of Lowell were nonetheless visionaries of a new era, and the city they built clearly reflected the corporate paternalism that was their philosophy. These early industrialists, so concerned with efficiency, constructed a model community in which mills, managers, and workers were all purposely located in close proximity to one another. For the workers, life in the mills and in the company-owned boardinghouses was separated by a walk of only a few feet. Our research has sought to understand what life was like for those who made this walk.

This search for information concerning the mill workers has been an interdisciplinary endeavor designed to capture the multi-faceted nature of life in an urban/industrial community. Lowell's evolving urban landscape was, after all, new to most who were to labor in the mills during the early years of the city's growth. The natural and social forces that were to shape Lowell's development as a city influenced the lives of the mill workers as well.

This report presents the results of our initial look at those who worked in the Boott Mills and lived in Boott Corporation boardinghouses. The research is the product of a cooperative effort between the Division of Cultural Resources of the North Atlantic Region of the National Park Service and the Center for Archaeological Studies at Boston University. The purpose of the report is to establish a framework for our continuing research and to begin constructing a context for interpreting the findings of the study. Therefore more questions will be posed than will be answered. The interdisciplinary investigation of the Boott Mills is envisioned as a five-year study, and like any such project, it needs a beginning. The foundation this work represents should provide a firm footing for our future research.

Stephen A. Mrozowski
Boston, Massachusetts
October 20, 1986

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Richard M. Candee gave unparalleled research guidance to us all, came up with more leads and ideas than any of us could find time to follow up on, and instilled delight in us through his wit and sense of humor. Douglas George, a doctoral student at Boston University's Department of Archaeology, shared sources he uncovered in his own research on the Boott Mills and made valuable observations regarding the archeological features uncovered at the Lowell Boarding House Park Site. Katy Gavan of the Denver Service Center, NPS, allowed us to copy her slides of the restoration work on a Lowell boardinghouse. Jane Becker, a Ph.D. student in Boston University's American and New England Studies Program, provided leads she encountered during her dissertation research. Martha Mayo kindly suggested quite a few useful sources held only at the Special Collections of the University of Lowell Library, including the data compiled for "The Mill Workers of Lowell" project. Mr. Richard Cohen, Lowell Water Department, Mrs. Morris, Lowell Health Department, and Mr. Frank Grady, Lowell Engineers' Office, all kindly allowed access to, and advice concerning, the truly invaluable and remarkable records they curate in their respective departments.

Donna Mailloux, Michael Wurm, Robert Wieble, and Lawrence Gall of the Lowell National National Historical Park have been extremely kind in giving of their time and in sharing many fascinating documents and insights. Larry Gross of the Museum of American Textile History shared his notes on records of Boott Mills correspondence in a most generous manner. We further owe a tremendous debt of gratitude to Mrs. Blanche P. Graham of Lowell. Kathleen Bond especially feels very fortunate to have had the opportunity to learn from her; Mrs. Graham's eloquence and generosity in sharing her memories have greatly enriched Katie's contribution to this report.

The members of the field crew for the test excavations at the Boarding House Park Site were Ed Bell, Katie Bond, Lauren Cook, Jane Dineen, Barbara Frazier, Leslie Freund, Alec Johnston, David Landon, Brendan McDermott, Chip Pennington, Ellie Reese, and Nancy Seasholes; they deserve a special vote of thanks for working under often less-than-ideal conditions (despite the fact that it was warm for November). The laboratory processing and artifact cataloging was done by Ed Bell, Sara Mascia, and Julie Ernstein; Julie shouldered most of this burden, even if Sara holds the record for cataloging the largest number of window glass fragments. We express heartfelt gratitude to all three and stand somewhat in awe of the speed with which they accomplished an enormous task. Gerald Macomber did a superb job of drafting the figures for the report. Students at Boston University who contributed to the research effort as part of their coursework include Carol Huggins, Susana Forster-Castillo, and Mark Wilson. Lillian Zabarsky merits our special thanks for her efforts as bookkeeper for the project. Technical support equipment for palynology was provided by National Science Foundation Grant BNS-7924470. William Henneman of the Computer Science Department at Boston University very generously gave us access to his Laserwriter.

This project has been enriched by a pervasive attitude of cooperation and sharing among its participants, which, combined with a lively enthusiasm for the subject, has made us each work harder toward our mutual goal of learning what we can of the lives of millworkers in Lowell.

Figure 1-1. A former Boott Mills boardinghouse restored by the Lowell Historic Preservation Commission to its original exterior appearance.

Chapter 1

INTRODUCTION

by Mary C. Beaudry

The Lowell Boott Mills Study is a long-term, interdisciplinary project designed to shed light upon the homelife of millworkers in Lowell, Massachusetts, from 1830 to 1950. It is being conducted under a five-year cooperative agreement between the North Atlantic Regional Office of the National Park Service (NPS) and the Center for Archaeological Studies at Boston University. Principals for the project are Stephen A. Mrozowski, Supervisory Archeologist for NPS, and Drs. Mary C. Beaudry and Ricardo J. Elia of Boston University, Principal Investigators, who serve as Research Director and Project Manager, respectively. Other project personnel include Dr. Richard Candee of Boston University, Coordinator for Architectural Research, Thomas Mahlstedt, Consultant on Boott Millyard archeology, Dr. Gerald K. Kelso (NPS), Palynologist, Donald G. Jones (Boston University), Project Archaeologist, and Research Assistants Edward L. Bell, Kathleen H. Bond, and Gregory K. Clancey, all of Boston University. Mrozowski, in addition to his role as Supervisory Archeologist, is serving as Project Archeobotanist.

This preliminary report summarizes the first phase of documentary and archeological research on the project. The Boott Mills boardinghouses are the focus of study for a number of reasons. First, the Boott Cotton Mills complex is the most intact example of a nineteenth-century millyard that survives in Lowell. Its Mill #6 is currently undergoing extensive rehabilitation in order to serve as a central exhibit in the overall interpretation of industrial history at Lowell; it will also eventually house NPS offices as well as community-service facilities. Nearby, across the Eastern Canal, under the auspices of the Lowell Historic Preservation Commission, one of the former Boott Mill boardinghouses has been restored to its original exterior appearance (Figure 1-1). This restored boardinghouse, as the Patrick J. Mogan Cultural Center, will house the Special Collections now reposited at Lowell University, in addition to providing office space for various cultural organizations in Lowell. Further, it will contain exhibits interpreting the homelife of millworkers. An integral feature of the Cultural Center will be the Boarding House Park, which will contain an amphitheatre designed to accommodate large gatherings and outdoor festivals, plays, and so forth. The amphitheatre will replace what is at present a most unprepossessing parking lot; beneath the lot's hot-top surface, however, lie the remains of two of the former Boott boardinghouses, their backlots, and attendant utilities (Figure 1-2).

It is these two boardinghouse blocks, originally Boott Corporation units #33 through #48, that have been the chief focus of documentary and archeological work during the first phase of the Lowell Boott Mills Study. As described in the text of the cooperative agreement between the National Park Service and Boston University, Phase I was to consist of "background documentary research and the development of a research design that will assess the nature of the archeological resources and their research and interpretative potential relative to Lowell National Historical Park's interpretive themes," and, in Phase II, to "conduct archeological testing according to the research design" (*Cooperative Agreement* 1985: np). Although sites other than the Boott Mill boardinghouses form elements of this study (the Kirk Street Agents' House, the Boott Millyard, and Old City Hall), it is only the Boott boardinghouses that receive attention in this report. Archeological testing at the Boott Millyard and at Old City Hall is being conducted under the direction of Thomas Mahlstedt outside of the NPS/BU cooperative agreement. Work at the Kirk Street Agents' House was performed by Boston University in the summer of 1986.

The Lowell Boott Mills Study is interdisciplinary in nature because historical archeology is of necessity an interdisciplinary field. Any research into the historical past requires the use of documentary evidence as well as secondary historical literature; further, it is critical to incorporate the perspectives and expertise of scholars in closely allied disciplines such as architectural history, urban and industrial history, cultural geography, and anthropology. Further, the nature of archeological inquiry requires the application of a variety of specialized analytical techniques (e. g.,

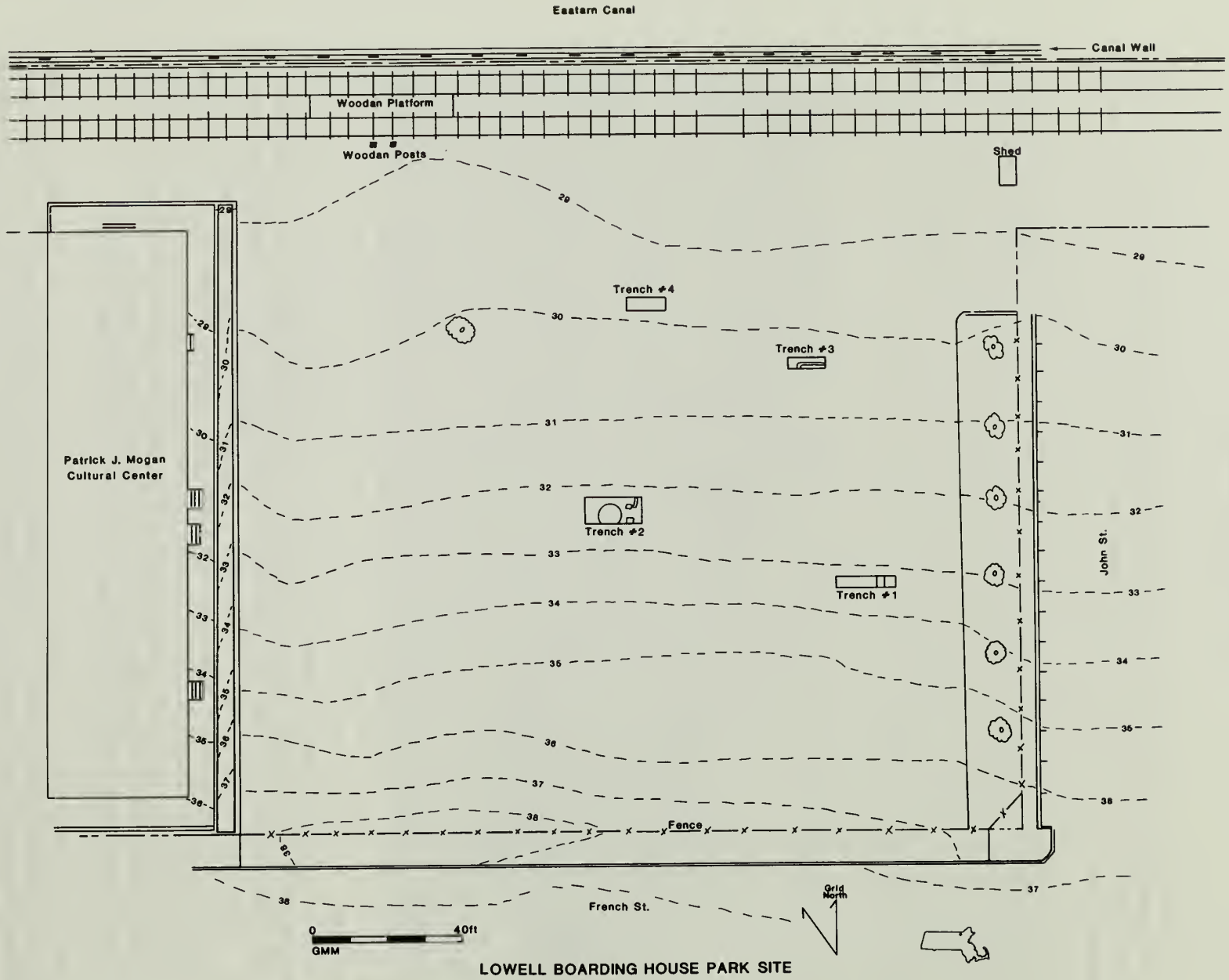


Figure 1-2. Plan of the Proposed Boarding House Park Site, Lowell, Massachusetts.

palynology, ethnobotany, soils chemistry, parasitology, etc.) if the archeological data are to result in the fullest possible interpretation of the past. Insofar as possible, the present study has incorporated these interrelated disciplinary approaches from the outset with the goal of providing a comprehensive picture of the lives of millworkers in Lowell; the research design for this interdisciplinary approach is discussed in Chapter 2.

Because a great deal is known about the general history of the Boott Mills Corporation and the architecture of both its mills and boardinghouses (cf. Gross and Wright 1985; Shepley et al. 1980), the research of this project concentrated on attempting to determine whether the change in use of the structures from company-regulated boardinghouses for mill girls to company-owned tenements for recent immigrants is likely to be reflected in the archeological record (*Cooperative Agreement* 1985: np). The changes in the residential make-up of the Boott boardinghouses, as well as in the attendant facilities and the structures themselves, can be interpreted to reflect to a considerable extent changes in corporate policy and profits; Chapter 3, by Mary C. Beaudry, therefore presents a brief overview of the history of the Boott Corporation in order to provide the context for the chapters that follow.

From the outset it was recognized that the research design for the Lowell Boott Mills Study must acknowledge the richness of the historical record, both primary and secondary, as well as the complexities of the above- and below-ground built environment of the city. Therefore the investigation incorporated a systematic approach both to the documentary and archeological record designed to provide detailed, contextually relevant data on an urban industrial community.

Archeologists working in North America have only recently attempted to come to grips with the problems of excavating in cities and with relating excavated deposits to archival sources (cf. Dickens 1982). A number of investigators propose that the documentary record should be subjected to systematic sampling akin to archeological sampling (e. g., Rubertone 1982a: 20; Cressey and Stephens 1982: 49); such an approach of necessity limits the investigator to those classes of records produced at regular intervals by governmental or other agencies (e. g., tax lists, censuses, city directories). As helpful as these sources may be, they often fail to capture the mundane aspects of everyday life that most closely relate to the materials that normally comprise the bulk of urban deposits.

The study of the Boott Mill boardinghouses involved thorough research into the above-mentioned sources as well as in bureaucratic and business records, in combination with analyses of cartographic sources, local newspapers, and oral history interviews with former Boott employees. The goal was to reconstruct as fully as possible the lifeways of the resident population of the boarding/tenement houses at each phase of their development. Further, secondary sources were consulted to provide background for life in the mill towns and in Lowell in particular; review of such works aided in the refinement of research questions that are significant as well as amenable to archeological investigation (cf. Beaudry 1984).

An exhaustive approach aimed at elucidating the texture of peoples' everyday lives as residents of mill housing is eminently suited both to defining research problems appropriate for archeological study and to delineating aspects of site formation that can be closely and accurately correlated with the documentary record. A subsidiary but far from insignificant goal of the documentary research was to construct a detailed sequence of historical maps that illustrate site development over time as a specific guide to archeological testing. The results of this work are presented in Chapter 4, The Boott Mills Boardinghouses and Adjacent Structures: The Evidence of Maps and Photographs, by Gregory K. Clancey. An annotated bibliography of the cartographic and pictoral sources consulted by Clancey in his research appears in Appendix A.

Chapter 5, by Kathleen H. Bond, narrows the focus of inquiry to Boott units #33 through #48. Using census data, city directories, oral history, Boott corporate correspondence, and other sources, Bond constructs a demographic profile of the 16 housing units contained within the two boardinghouse blocks that formerly faced James (later Sirk) and John Streets. From this research we learn of shifts in ethnic composition, gender ratios, and occupational status of the

boardinghouse/tenement population, information that is vital to developing a set of expectations for archeological inquiry. Appendix B presents a complete listing, in decennial intervals, of the boardinghouses' residential population.

In Chapter 6, Edward L. Bell discusses the preliminary findings of his research into health, sanitation, and hygiene at the Boott Mills boardinghouses as well as in the mills themselves. Not only does this research provide vital information on the sanitary facilities and utilities of the boardinghouses, it also provides valuable insight into conceptualizations of health and cleanliness throughout the nineteenth century. Changing concepts of hygiene, combined with shifts in profit-oriented corporate involvement with the lives of mill workers, are clearly reflected in the evolution of waste and water facilities at the Boott. Such information is critical to the interpretation of archeological features as well as of data recovered through palynological and floral analysis.

Chapter 7, by Mary C. Beaudry, is a detailed discussion of the results of archeological testing at the proposed Boarding House Park. The sampling strategy, which was based on intensive archival research, is first presented. Features and artifactual remains are then described and interpreted in light of the documentary research (Chapters 4 through 6), secondary historical sources, comparative archeological sites, and additional primary documentary research. Appendix C contains a complete catalogue of the artifactual material recovered.

Chapter 8, by David B. Landon, is a study of foodways at the Lowell boardinghouses; it is based on both historical and zooarcheological evidence. Chapter 9, by Stephen A. Mrozowski and Gerald K. Kelso, provides a discussion of the palynological and floral analysis of soil samples recovered during the testing program. While the results are tentative at this preliminary stage of the project, they are nevertheless suggestive of issues to be explored in further phases of the work (e.g., changes in the urban landscape and its plant regime).

In Chapter 10 Mrozowski and Beaudry bring together the data recovered through the variegated aspects of the project research in order to provide an interpretation of the results of the Lowell Boott Mills Study to date. Even at this early stage of analysis, a great deal of new information on life in the Lowell boardinghouses has been uncovered. Such detailed information on a single site within Lowell will prove indispensable to the Lowell National Park in its site interpretation; further, as a microcosm, the Lowell Boott Mills Study presents a community analysis that can, "like a biography writ large, illuminate, enliven, and give a human dimension to our understanding of general social conditions and developments" (Ryan 1981: 17). It is with these goals in mind that a series of recommendations for interpretation as well as for further research are presented.

Chapter 2

RESEARCH DESIGN FOR THE BOOTT MILLS STUDY

by Mary C. Beaudry and Stephen A. Mrozowski

Research Framework

The research design developed for the Lowell Boott Mills Study provides the vehicle for a truly comprehensive interdisciplinary approach to historical archeology. The aim is to go beyond the limited use of documentary sources and zooarcheological analysis common in the discipline. These avenues of inquiry, along with occasional use of oral history, form what most historical archeologists perceive as interdisciplinary research; MacNeish (1978: 19-26), however, has pointed out that such an approach is more correctly termed *multidisciplinary*. The goal is to exploit as wide a range as possible of analytical techniques that can inform us of past behavior and living conditions.

The key to a truly interdisciplinary approach is not so much the number of analytical procedures one employs as it is a matter of incorporating the research interests of the various specialists involved in all stages of a project, especially in the planning process. In this way it is possible to develop sampling strategies best suited to the recovery of information relevant to the overall project goals; what is more, the end product of a truly interdisciplinary project should not be a collection of unrelated, independently produced specialist reports but rather a comprehensive report of closely related research effort focused on common goals. Thus even at this preliminary phase of the Lowell Boott Mills Study, we have delineated the contributions that each analytical or research procedure can make to the overall goals of the project; further, we have taken into consideration the interrelationships among the different specialties. Palynological analysis, for instance, is geared toward reconstructing regional vegetation communities as well as toward the investigation of dietary patterns and plant regimes in the urban/industrial context of the Boott Mills boardinghouses. The project Palynologist participated in developing a field sampling strategy for the excavators to employ and also worked in the field to retrieve controlled column samples from trench profiles. The pollen data will be considered in light of information gleaned from archeobotanical, zooarcheological, material culture, and documentary analyses (see Chapter 8). Such interrelationships exist for all of the forms of analysis presented in this report.

The interdisciplinary approach is the framework or theme through which a series of problem orientations have been identified. The two broad areas to be examined are *Residential* and *Industrial* issues; within each of the areas, a number of subareas have been delineated.

Residential Problem Focus

The first subarea in the *Residential* problem focus is *architecture*. Richard Candee has discussed the development of New England mill community architecture as an outgrowth of the Waltham model established by the Boston Associates (1985: 17-43). He presents an overview of the major textile-producing communities that grew up in the region and notes that although Waltham was the model for Lowell, variations, both in terms of factory design and workers' housing, were employed in other towns (1985: 40). Our understanding of the deliberate planning for industrial communities and of the architectural styles and techniques employed is, through the work of scholars such as Candee, well developed. We know far less, however, about the internal arrangement of workers' living quarters and about the use of enclosed yard areas immediately behind the workers' housing. The archeology, as well as much of the documentary research for this project have been aimed at shedding light on these issues.

Similarly, we know very little about the nature and quality of the material life and diet of mill workers. Our study of the Boott Mill boardinghouses has focused to a considerable degree on the topic of *foodways*. Our interest is in the entire foodways system, including types and quantities of foodstuffs, food purchase and procurement, food preparation, dining habits, and possible social and ethnic variation in dietary patterns (see Chapters 7 and 8). We hope eventually to compare workers' foodways with those of mill supervisory personnel, especially with deposits from the Agents' House, if such are located in the future. Needless to say, the study of foodways relates closely to those aspects of material life that are particularly amenable to archeological study, for both fancy and humble utensils and dishes find their way into the archeological record.

The analysis of these items of material culture relates closely, therefore, to a study of *consumer behavior* among workers, supervisors, and, most pointedly, boardinghouse keepers. This fact helps to underscore the effects of the policy of corporate paternalism on the lives of mill workers, because, as Chapter 4 clearly demonstrates, boardinghouse residents owned only their own clothing and personal effects; they were not in control of many other aspects of their everyday material lives. The environment in which they lived and worked was created and controlled by others; the boardinghouse keepers, who like the mill owners were engaged in a profit-making enterprise, exercised control over the domestic environment. Workers were not directly involved in the choice of the furnishings of their surroundings, of the food they ate, and even of the sorts of dishes, glassware, and cutlery with which they ate and from which they drank. Thus the early decades of Lowell present us with a truly corporate pattern of consumption and lifestyle. Presumably, family residences, such as tenement houses, would reveal a different pattern; further, recovery of items intended for personal use should shed light on individual choices and adaptations. Whether such differences can be detected in the archeological record is one of the critical challenges to the effectiveness of our research design, but investigation of this issue is one that demands a more extensive archeological data base than that described in Chapter 7.

Systems of utilities and sanitation are poorly understood despite the availability of a sizeable body of information on workers' health in Lowell (see Chapter 6). Research on *health and hygiene* is relatively new in historical archeology, and few archeologists have even mentioned in their reports the numerous features they encounter that relate to waste and water management (e.g., drains and sewers). Features that are commonly discussed, such as wells, privies, and cisterns, are seldom described in terms of their intended functions or construction details and receive attention only because they contain discarded items that have nothing to do with the features themselves. Because waste and water management facilities are highly reflective of technological change as well as of community/municipal policy and priorities, they should not be ignored (cf. Honerkamp and Council 1984; Wamsley 1982; Roberts and Barrett 1984).

Our project aims to delineate, insofar as possible, the waste and water management facilities of the Boott boardinghouses because we feel that these reflect, perhaps far more truthfully than stated company policy, a corporate *ideology* that sought to control workers' lives without taking ultimate responsibility for them. The structure and nature of such features will be significant in this regard; further, archeological contexts such as privies and wells often provide anaerobic environments in which remains are excellently preserved. It is in such contexts that parasitological evidence is to be found, since parasite ova are carried in human wastes (Heizer 1976; Hevly et al. 1979; Hall and Kenward 1982; Reinhard, Mrozowski and Orloski 1986). Analysis of these ova can provide insight into health as well as overall sanitary conditions; certainly what we know of the nature of the water supply to the boardinghouses (see Chapter 6) suggests that parasites will be present.

Space becomes a commodity in urban contexts, and its use reflects the evolution and growth of a city. Urban land use has increasingly occupied the attention of urban and industrial historians (e.g., Hershberg 1981: 3-35; Hohenberg and Lees 1985: 290-330; Lampard 1985: 194-249, 1983: 3-53; Davison 1983: 349-370; Warner 1962). As Chapter 2 illustrates, the built environment of the Boott Mills and its housing reflected corporate ideology and corporate response to changing technology and fluctuating profitability. We are hopeful, however, that close examination of the use of boardinghouse backlots will yield information on the ways in which those spaces served the

needs of the boardinghouse residents. Further, several aspects of our research will coalesce in an analysis of the evolution of the urban, industrial landscape in Lowell. A study of the pollen and other plant remains from the boardinghouse yards will reveal the nature of the plant communities in this area before and after the development of the industrial community; this study will be extended to the present to trace the long-term changes brought about through increasingly dense urban land use, pollution, and so forth.

Industrial Problem Focus

Examination of the industrial complex that comprised the Boott Mill Corporation from both documentary and archeological perspectives, to be presented in subsequent volumes of this study, will contribute to an overall understanding of corporate attitudes toward labor, production, and technology. Changes over time in the *physical layout* of the millyard, in addition to *architectural changes*, came about in direct response to technological innovations that increased production and hence profits for corporate stockholders (see Chapter 3). Such modifications to the work environment served also to alter the relationship between workers and machines.

This relationship, and the nature of the work environment (temperature, humidity, noise, toxicity) as a whole, has been termed *industrial ecology*. "Changes wrought in the material environment of production" must be carefully delineated in order to provide a "comprehensive picture of the daily routines" that workers performed. Hence, an industrial ecological approach aims to "merge an account of the worker's tasks with description of a particular workplace and its equipment" (Leary 1979: 178).

Information relevant to a diachronic investigation of the industrial ecology of the Boott Mills will be sought in company records (e.g., payroll and production records, when available), company correspondence, personal papers, reports on hygiene and sanitation in the mills, and contemporary pictorial sources (e.g., lithographs, insurance maps, etc.). Archival sources form a critical component of the study, but they may not provide as complete a picture of changes in the industrial environment as can be obtained through combining them with evidence from the archeological record. Therefore, the primary goal of archeological investigations in the Boott millyard will be to delineate and describe features such as curbing and structural remains for which we have no other data. This information, in combination with evidence for earlier grade levels, will be used to trace the spatial arrangement of the millyard over time. The potential for recovering such data is demonstrated through the results of work described below.

Recent monitoring of construction at Boott Mill #6 by Thomas Mahlstedt and Douglas George, under the auspices of the Denver Service Center of the National Park Service, has resulted in the discovery of remains of a number of early mill structures. The first feature uncovered has been interpreted as a wheelpit for the main driveshaft of a turbine that at one time transferred power throughout the #6 mill. The floor level and especially the vent holes of the structure in which this feature is housed are a good indication of the original courtyard level; this grade was raised by a deposit of fill of up to 5 1/2 feet in depth when the structure was torn down. This probably occurred in 1870-71 in order to make way for the erection of a new, up-to-date Boott #6 building (Thomas Mahlstedt, personal communication to M. Beaudry, June, 1986; Douglas George, personal communication to M. Beaudry, October, 1985; see also Gross and Wright 1985: 162-192 for a discussion of the architecture of Mill #6 prior to 1904).

Other structures (e.g., the remains of a storage building shown in an 1842 lithograph, a picker house foundation, various wall segments) and features (e.g., steam pipes, drains, cisterns, coal pockets) reveal not only changes brought about through adaptation to technological innovation--for instance, enlarging of coal pocket to accommodate larger rail cars--but also point out ways in which the corporation dealt with needs for sanitation, efficient power transmission, and the movement of both raw and finished goods.

Landscape alterations to the millyard are similarly reflective of the evolution of the *ideology of industrial capitalism.* The early courtyard, shown in illustrations dating to the 1850s, was pleasantly landscaped; four enclosed ovals contained deciduous trees and lawns. Over time, although the grassy areas were retained, more and more structures, such as hose houses and ramps, took up what had formerly been open space. In the twentieth century, the courtyard was paved in order to permit truck access, and all efforts to soften the industrial setting with plantings and green areas were abandoned (Shepley et al. 1980: 20; see Chapter 3). Both landscape modifications and structural changes such as those discussed above can be documented through pictorial and archeological evidence and can provide evidence of how the erosion of corporate paternalism brought about quite tangible changes in the quality of the mill environment.

Thus archeological investigations, while providing restoration architects and site interpreters with accurate data on the physical arrangment of the millyard over time, will also yield evidence that archeologists will be able to apply to a broad consideration of the industrial environment and especially of the ways in which corporate policies affected the ecology of the workplace.

The First Phase of the Study: Life in the Boardinghouses

Just as nineteenth-century Lowell served as a model that newly developing New England industrial communities imitated and that long-established urban centers followed (Candee 1985: 17), the Boott Cotton Mills corporate housing serves in our study as a microcosm of industrialized urban communities in North America. Through the study of the home life of Boott Mills workers we gain insight not only into urban industrialization as a large-scale phenomenon but also as a process with economic and social ramifications that wholly and irrevocably altered working peoples' relationships to their place of work, to work itself, to their homes, and to their families.

Chapter 3

THE BOOTT COTTON MILLS CORPORATION MILL YARD AND HOUSING: MATERIAL EXPRESSIONS OF INDUSTRIAL CAPITALISM

by Mary C. Beaudry

The Boott Cotton Mills was incorporated on March 27, 1835, for the manufacture of cotton and woollen goods. Named for Kirk Boott, agent for the Boston entrepreneurs who capitalized the company, the mill and its housing occupied a 5.7-acre parcel along the Merrimack River (Shepley et al. 1980: 1). The industrial complex was located between the river and the Eastern Canal, to the south of which lay the corporate boardinghouses and tenements. The canal formed a slender boundary between the mill and the workers' housing, providing power for the industry and, despite the fact that it carried human and other wastes from upriver, drinking water for the resident population. The canal's service both to industry and domestic needs is symbolic of the close relationship between work and home life, and the benefits and ills of each, in the early years of Lowell.

Factory housing was intended to serve the interests of the organization in "a system dominated by the requirements of capital [that] shaped work and life itself" (Gross and Wright 1985:15). Stockholders and mill owners justified the institution of social controls in terms of public interest and benevolent concern for the welfare of their workers, but the founding officers and mill owners were nevertheless quite open in admitting to the self-interest that prompted the establishment of "a strict system of moral police" (Miles 1846: 128, quoted in Gross and Wright 1985: 12). The boardinghouse system, with its emphasis on 24-hour control over the workforce, was designed to accommodate a transient, constantly "self-renewing pool of inexperienced, docile, unorganized labor" (Gross and Wright 1985: 13-14). This policy of corporate paternalism was intended to prevent the development of conditions such as those found in England and Europe. The issue was not so much avoiding the growth of working-class slums as it was eliminating the possibility of labor unrest that might arise in a stable workforce who had the time and the inclination to "recognize their exploitation at the hands of the investors" (Gross and Wright 1985: 14).

The nature of the work in the mills was part of the process by which the operatives became a part of the "large machine" that Nathan Appleton hoped to see built in Lowell (Bender 1975: 99, quoted in Gross and Wright 1985: 12).

> The workers' sense of accomplishment was further reduced by the specialization of the factory system as devised by the [Boott Cotton Mills] and its followers. Each part of the production process was broken down into smaller and smaller segments, each of which required less and less skill, and no one of which could be said to produce a finished product. This careful and extreme division of labor freed the owners from the need for skilled operatives (whether handweavers or mulespinners), permitted them to utilize a short-term workforce, and minimized the opportunity for labor to "interfere with" or exert and have control over, the boss system (and their own lives). (Gross and Wright 1985: 16)

Much of the information in this chapter has been drawn from two sources: the Shepley Bullfinch Richardson Abbot *Cultural Resource Inventory* for Lowell (1980) and the Gross and Wright 1985 report for Flansburgh and Associates, *Boott Mill Complex, Lowell National Historical Park, Lowell, Massachusetts*. Both should be consulted for specific details on, for instance, the chronology of mill construction.

The newly-enforced work discipline (e.g., rules forbade merriment, reading, singing, drinking, meetings, leaving work, and gambling) and its extension into the home lives of laborers was, for the corporations, highly profitable. This "political and social experiment in management and control without parallel" (Gross and Wright 1985:18), while praised by those who profited from it, was opposed by workers and others. When Yankee women became dissatisfied with continual wage cuts despite the profitability of the corporation, they returned to their homes. At the same time, the corporation saw the advantage of replenishing the workforce with Irish immigrants who arrived impoverished and anxious to work after escaping the famines at home. "Strong and independent labor continued to be seen as the enemy and a low-skilled, transient, divided workforce the defense" (Gross and Wright 1985: 21).

Initially the Boott issued stock totalling $1,000,000 and was authorized to acquire real estate of up to $150,000 in value. By 1837, its level of capital was raised an additional $200,000 in reaction to unforeseen rises in the costs of machinery and construction. Throughout the nineteenth century, the corporation's capital remained at $1,200,000 (Shepley et al. 1980: 1).

The first Treasurer of the Boott was John A. Lowell, one of its incorporators; he served from 1827 to 1844. The company's agents, however, were the prime movers behind mill expansion and profitability. Benjamin French (1836-45) and Linus Child (1845-62) were the agents during the early years of the company (Shepley et al. 1980: 1). By the time French became agent, Mills #1 and #2 were in operation, using machinery provided by the Lowell Machine Shop. In 1842, with the four mills that had been planned in operation, the Boott employed 950 females and 120 males who produced over 9,000,000 yards of coarse cloth (Shepley et al. 1980: 1-2).

Up until the time of the Civil War, the output of the Boott Mills increased steadily. Mismanagement of the company in the years prior to the war, combined with cotton shortages brought on by the conflict, led to deterioration of machinery and failure to pay a dividend to shareholders in 1863 (Shepley et al. 1980: 1-2). Complaints that the business had been manipulated to the benefit of the stockholders ensued (e.g., the shareholders had been excluded from voting on the new treasurer, on the agent's commission, and so forth).

The agent hired in 1862, William Burke, former head of the Lowell Machine Shop, was faced with the need for extensive repairs. Between 1862 and 1863, major repairs, rebuilding, and improvements were undertaken, and the mills were closed temporarily. By 1868, when Alexander Cumnock took over as agent, employees numbered 1020 females and 310 males. The quantity of spindles and looms had been more than doubled from the original numbers, and more than 14,000,000 yards of cloth were produced annually (Shepley et al. 1980: 2-3).

Cumnock fostered continued expansion during his tenure as agent (1868-96), with most of the corporation's growth occurring in the 1870s and early 1880s. During this time the size of the mills doubled; between 1870 and 1874, a dividend of from 12.5 to 20% was paid to the shareholders. Many new products, such as flannels, piques, and drills (which were exported to China), were introduced. An article published in the *New York Herald* in 1878 (quoted in Shepley et al. 1979: 3) stated that the average mill operative at the Boott produced enough cloth per year to clothe 1900 "Chinamen." At this time the Boott employed 1300 women and 500 males (Shepley et al. 1980: 3).

By the 1880s, it was possible for the company to expand without hiring new employees. The increased efficiency of the machines being made, combined with the institution of management policies such as the speed-up (running the machines faster) and stretch-out (assigning each operative responsibility for additional machines) provided the means for this expansion (Gross and Wright 1985: 17). Production rose steadily to 1891, after which a slowed growth of the company and changes in products in response to the market insured continued profitability into the early twentieth century. New products introduced between 1890 and 1915 included cambrics, linens, lawns, ducks, corduroys, seamless bags, twills, and moleskins. After the turn of the century, however, there was a brief drop in employment in 1902 and 1903; the Great Depression caused

severe drops in employment and production. By 1940, the Boott had experienced some recovery, but it never fully rebounded from the effects of the Depression, rising labor unrest, and the movement of the textile industry to the southern United States. In 1956-57, the Boott Cotton Mills became an industrial real estate/management firm (Shepley et al. 1980: 3-4).

The changing configuration of the mill yard reflects changes in corporate policy as well as technological innovation. The four original mills were identical in design and were laid out in a spacious arrangement on a parcel of land between the Merrimack River and the Eastern Canal (Shepley et al. 1980: 6). The mill's boardinghouses, south of the canal, ranged tidily at right angles to the mills along Kirk, James, John, George, and Bridge Streets. Their architecture was, in most respects, quite similar to that of the mills (see Chapter 4). Across French Street, a block of tenements for overseers faced past the houses towards the mills.

The house built under the direction of the Massachusetts Corporation by 1845 as the home for the agents of both the Boott and the Massachusetts was in striking contrast to the simple, industrially inspired style of the rest of the mill housing. Facing on Kirk Street with its back to the overseers' block, the Agents' House was constructed in the urban vernacular style typical of upper-middle-class townhouses then being built in Boston's South End and exhibits elements of stylish detailing, such as elaborate wood-paneled double doors. It was raised above the other structures and above the street on an artificial terrace faced with cut granite blocks. The yard was completely enclosed, the front area by an imposing wrought-iron fence set into the top course of revetment stones. Thus while the corporations achieved their goal of integrating supervisory personnel and the workers in a planned neighborhood in the vicinity of the mill, the Agents' House stood as a material symbol of the stratification of the mill work force (cf. Robbins 1979; Coolidge 1942).

Despite the artificial creation of a "community," it is clear that workers "were purposefully divided by sex, by nationality, and by status" (Gross and Wright 1985: 21). As the data presented in Chapter 5 demonstrate, this segregation went beyond the external arrangement of workers' and supervisors' housing, extending to the residential make-up of individual boardinghouses and tenements.

Throughout the nineteenth century, the expansion of the mills brought about alterations to the original layout of the industrial complex. The mill yard became crowded as new mills were built and as existing structures were joined by connectors. The view of the mills in the 1852 *Gleason's Pictorial* shows well-clad ladies and gentlemen strolling around the perimeter of carefully trimmed oval lawns circled by trees (Figure 3-1). The Sidney and Neff 1850 view of the millyard, facing west, shows a far less elaborate and stylish setting (Figure 3-2). The parklike image of the industrial complex did not survive the nineteenth century, however, because the addition of new buildings continually encroached upon the open space of the mill yard (cf. Langenbach 1981).

Shepley et al. describe the original mill yard as being a completely enclosed compound, bounded on three sides by water and on the fourth by a wall or fence. Access to the yard was always limited to a bridge leading from John Street and two railroad bridges, one in Mill #6 and the other at the west end of the yard (Shepley et al. 1980: 19-20). The first mill buildings formed two parallel rows that nevertheless retained views to the river, to neighboring mills, and to the company housing (Shepley et al. 1980: 20). By the late 1840s, the yard began to take on the appearance of two enclosed courtyards (see above); between the 1860s and 1880s, the mill yard became fully enclosed and numerous subsidiary structures, such as hose houses and ramps, took up what had formerly been open space.

Among the technological innovations that fostered the millyard's changing character were new forms of motive power. The addition of steam engines to the power system between 1859 and 1873 created the need for boiler rooms with their attendant smoke stacks and for coal storage buildings (Shepley et al. 1980: 14, 17-18). The transport system for moving cotton and coal into the mills and finished products out also *increasingly affected the appearance of the mill complex.

Figure 3-1. A view of the Boott millyard published in *Gleason's Pictorial* in 1852. This romanticized scene presents an idealized image of early 19th-century industry.

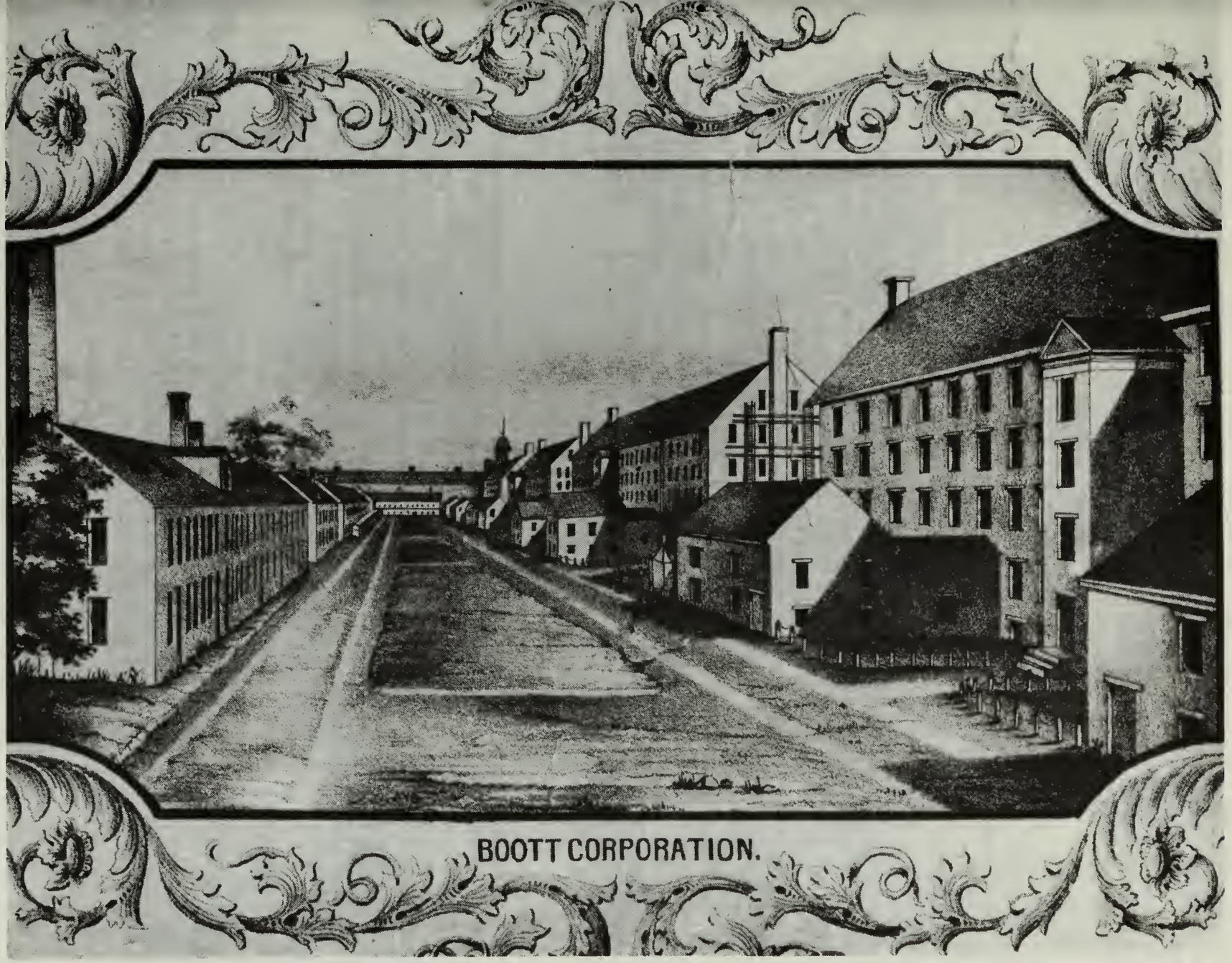


Figure 3-2. The view of Boott millyard shown on the Sidney & Neff 1850 wall map of Lowell. Courtesy of the Lowell Historical Society.

By 1850, two railroad spurs were brought in from the track running along Amory Street on the south side of the Eastern Canal. Introduction of new, larger box cars in the late nineteenth century meant that the coal pocket in Mill #6 had to be enlarged to accommodate the quantities of fuel needed and to service the new cars. In the mid-twentieth century, the mill yard, having long been nothing but an expanse of bare dirt with unused machinery scattered about (cf. Shepley et al. 1980: Figure 22), was paved to permit truck access.

The changing priorities of the Boott Corporation are revealed by the sacrifice of the mill housing block along Kirk Street, beginning in 1879-81, for construction of a cotton storehouse. This shift permitted a rebuilding of the southwest corner of the mill yard with new productive facilities (Shepley et al. 1980: 16). By 1900, two more cotton storehouses were added, one of which was made possible through the remodeling of a second boardinghouse block (see Chapter 4; Shepley et al. 1980: 18).

By 1906, the Boott had divested itself of much of its remaining housing. This appears to have been a response to a number of factors, including drops in employment in the early twentieth century. Many have speculated that the rise in the family labor system had an effect upon the mills' willingness to provide housing for its workers, but as Chapter 5 demonstrates, the preponderance of people living in Boott housing well into the twentieth century were single individuals. Presumably families lived elsewhere, in the neighborhoods that grew up as immigrants of various ethnic backgrounds elected to find their own housing among others of their kind (Kenngott 1912).

The employment figures for the Boott indicate that the workforce remained overwhelmingly female throughout its history, a factor that may have contributed to the demographic profile of the boardinghouses even after they ceased to house Yankee mill girls in large numbers. Further, the boardinghouses do not seem to have appealed to families, for, as Kathleen Bond's interview with former Boott boardinghouse resident Blanche Pelletier Graham reveals, very few children lived in these houses (see Chapter 5).

The corporate system in Lowell permanently altered the relationship between work and its outcome; what is more, it brought about a change in the organization and economy of working-class households. The corporate ideology that promoted social control as a mechanism for ensuring profit for a few fostered the development of a pervasive system that extended beyond the workplace and took charge of the domestic, religious, and educational aspects of workers' lives. The Boott clung tenaciously to this policy, especially as reflected in the boardinghouse system; company correspondence dating to the late 1890s reveals a continuing concern over control of both the residential makeup of the boardinghouses as well as over the behavior of those allowed to live in them (Boott Mills Correspondence Book, University of Lowell Special Collections; see Chapter 5). After 1900, however, when the northern states were prompted by the Progressive Reform Movement to undertake social welfare legislation, the corporation responded by divesting itself of its housing, and many companies moved their operations to the South, where there were no such restrictions (Gross and Wright 1985: 22).

In the case of the Boott Cotton Mills Corporation, the surviving mill yard and housing, together with the archeological remains for housing that has not survived, provide a vivid material record of the development and erosion of corporate paternalism, of technological innovation, of fluctuating profitability, and perhaps most significant, of the living and working conditions of the women, men, and children who "lived on the Boott."

Chapter 4

THE BOOTT MILLS BOARDINGHOUSES AND ADJACENT STRUCTURES: THE EVIDENCE OF MAPS AND PHOTOGRAPHS

by Gregory K. Clancey

Introduction

This chapter presents an architectural history of the Boott Mill boardinghouse blocks and certain adjacent Boott-owned structures. My interpretation relies almost exclusively upon 28 maps and 20 photographs of the site assembled from various archives. As the archival work constituted a major portion of the project, I have included a complete bibliography of maps and photographs as Appendix A, which also advises future scholars where *not* to look for additional primary source material.

As the interpretation of any one event has required comparing a number of maps and sometimes photographs, I have avoided footnoting the source material, but have described it in the text where I felt it important to do so. To those checking my assertions against the source material: beware that many of the maps contain inaccuracies, particularly in regard to sheds and ells. I have often had to trust one map above another on the basis of its accuracy in recording provable details. Certain of the maps are useless or redundant, and I suspect that by the twentieth century a good deal of copying of earlier versions was going on, with little reference to actual buildings. I have tried to identify the less useful or misleading maps in Appendix A, but a person who wishes to reconstruct my chronology from the source material will still have to do much sifting and comparing, make certain subjective choices, or test suppositions through archeological investigation where appropriate.

I have avoided a detailed discussion of interiors because no graphic information exists outside of the original floorplans. A good deal of oral and written information is available, however, from which one could reconstruct interior details and the uses of various spaces (see, for example, Chapter 5). I have also skirted the topic of building materials and methods, in which I am intensely interested, because the source material, most of it to be found among the records of the Proprietors of Locks and Canals in Lowell, deserves a much more thorough analysis. The two major supplements that a future scholar could make to this work would be deed research on all of the parcels in question, and research among building/demolition permits if these are available. I will deal more with possibilities for additional research in my conclusion.

Figure 4-1 provides the reader with an orientation map with a numbering system for the various buildings to be discussed. The numbers that I have assigned are entirely my own and do not refer to contemporary or historical nomenclature. To the best of my knowledge, the blocks were not identified by numbers or any simple system of designation in the past, and, as discussed in Chapter 5, the street numbering system in Lowell did not remain consistent over time. I therefore hope to avoid confusion by assigning my own numbers for the purpose of this discussion; other chapters in this report, however, use street numbers to refer to specific buildings.

The Original Boardinghouse Blocks

The original eight blocks of Boott Mill boardinghouses (Figure 4-1, nos. 1-8) were erected between 1835 and 1839, contemporaneously with the construction of the four original mills of the Boott. A plan of November, 1835 (Figure 4-2), the year in which the corporation was formed and

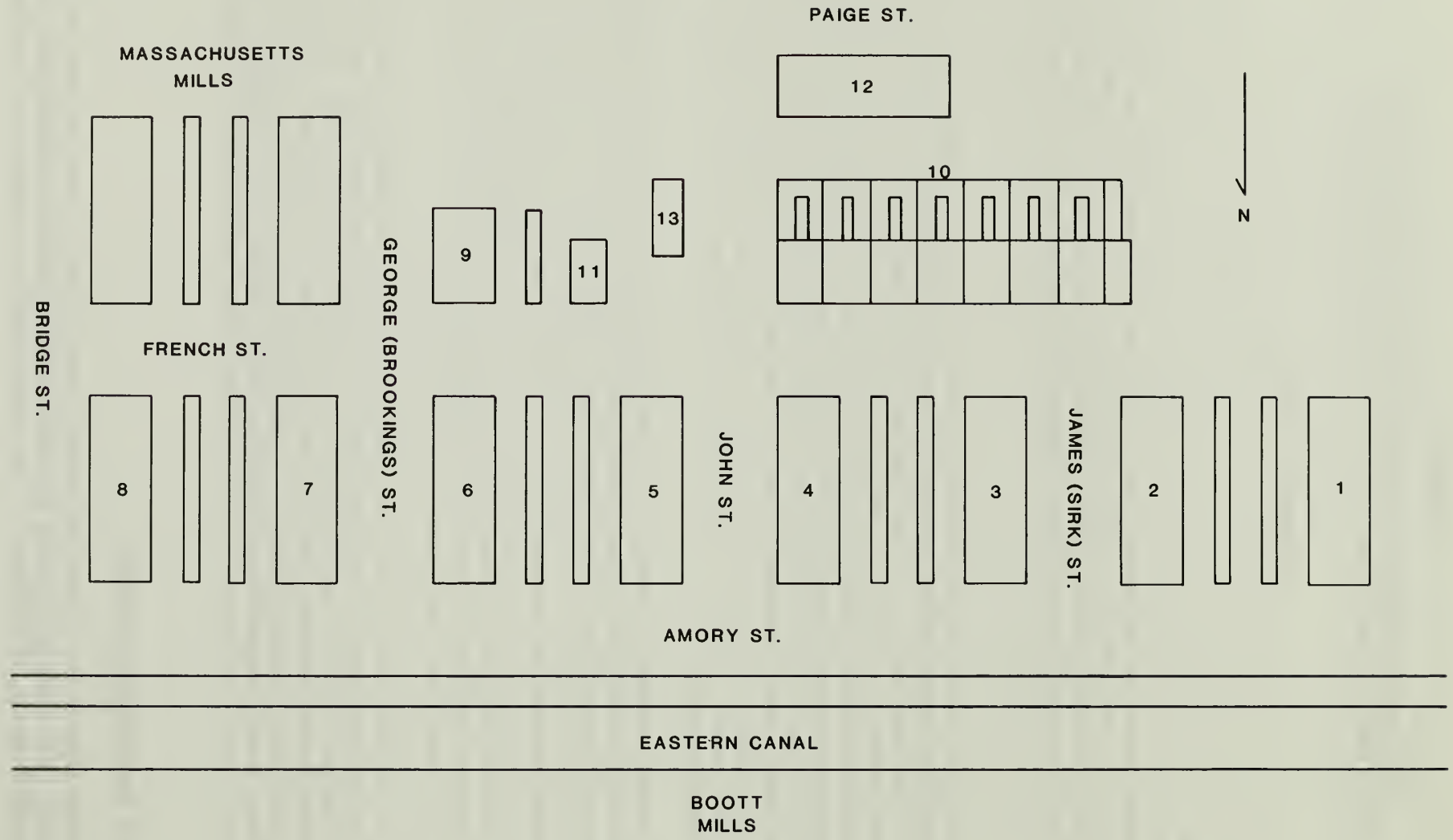


Figure 4-1. Orientation map for references to Boott Corporation housing made throughout this chapter. Not to scale.

the 5.7-acre mill site purchased, shows 16 buildings arranged on either side of what became French Street, evidence perhaps of the corporation's planning for future growth. By 1839, however, the Boott Corporation had deeded a portion of the land below French Street to the newly formed Massachusetts Mill Corporation, which erected a set of boardinghouses after the plan of the Boott blocks and in a location that had been earmarked on the 1835 chart for Boott housing. The lot between John and George Streets was also in Massachusetts Corporation ownership by 1844, with a corner reserved for the Third Baptist Society. By the time (1845) that both corporations jointly erected a house for their mill agents on the remaining parcel between French and Paige Streets, the Boott Corporation had apparently decided that the expansion of the boardinghouses in the manner of the 1835 plan would not be necessary.

The eight blocks constructed were modeled after two sets of floorplans and elevations extant in the Locks and Canals Collection in the Special Collections of the University of Lowell Library (Figure 4-3). Each block contained eight dwelling units, the facade having 18 window bays separated into three groups by the chimney stacks, indicating the presence of interior brick party walls that rose the entire 3 1/2 stories. In all of the blocks except the one fronting Bridge Street, the foundation of which was on level ground, the slope of the ground surface from French Street to the Eastern Canal dictated that the foundations be stepped. This, together with the resulting stepped roofline, the insertion of "Dutch" chimnies at the points of fracture, and the placement of entry doors, gave the blocks a strong tripartite appearance.

A surviving elevation for the "Boott Block of Boarding Houses" (Figure 4-3) shows doors placed three bays in from the left and right ends and two doors centered in the ninth and tenth bays. Basement windows can be seen at the base of the elevation. This plan may have been used for the Bridge Street Boott boardinghouse block, but, as mentioned above, the others were stepped to accommodate the topography, and the arrangement of doors and windows was altered accordingly.

The Locks and Canals Collection also contains a set of floor plans showing each of the three stories. The second and third floor plans are identical. The first floor is separated into eight units: four in the middle to be used as boardinghouses, and two at each end intended to function as single-family tenements for supervisory personnel (Huggins 1985: 2).

The first floor of a typical boardinghouse consisted of a dining room, a sitting room, a kitchen, a washing and storage area, and quarters for the boardinghouse keeper (Karabatsos 19??: Document 5). The second and third floors contained bedrooms shared by the boarders; these were heated by fireplaces located in the interior brick party walls (Huggins 1985: 3).

Each boardinghouse block was approximately 150 feet in length and 36 feet deep. The four boardinghouse units were 25 feet long by 36 feet deep, while the end tenement units were half this size. The boardinghouses were of common brick laid in English bond (six rows of stretchers alternating with one row of headers), and the load-bearing walls were two courses thick (Huggins 1985: 4).

The "Dutch" or stepped gable ends and intermediate chimnies may represent the only conscious stylistic devices on the buildings' exteriors. It may be that even these were chosen for a practical reason, e.g., to prevent the chimnies from leaning. The remainder of each building made use of materials and methods typical of the better industrial and commercial architecture of the era: granite foundations, brick laid in English bond, regularly placed six-over-six double-hung sash windows, granite lintels and sills, small pedimented dormers, six-paneled wooden doors, slate roofs, etc. Symmetry, neatness, and economy characterized the buildings' exterior appearance, as they did that of the four original mill buildings. The lack of exterior stylistic devices probably indicates that the buildings were perceived by their designers as industrial in character and not as transplanted and simplified examples of urban townhouses.

Behind each block and running parallel to its rear wall across a small yard space was a completely detached wooden shed. These structures were of one story with a pitched roof, and in

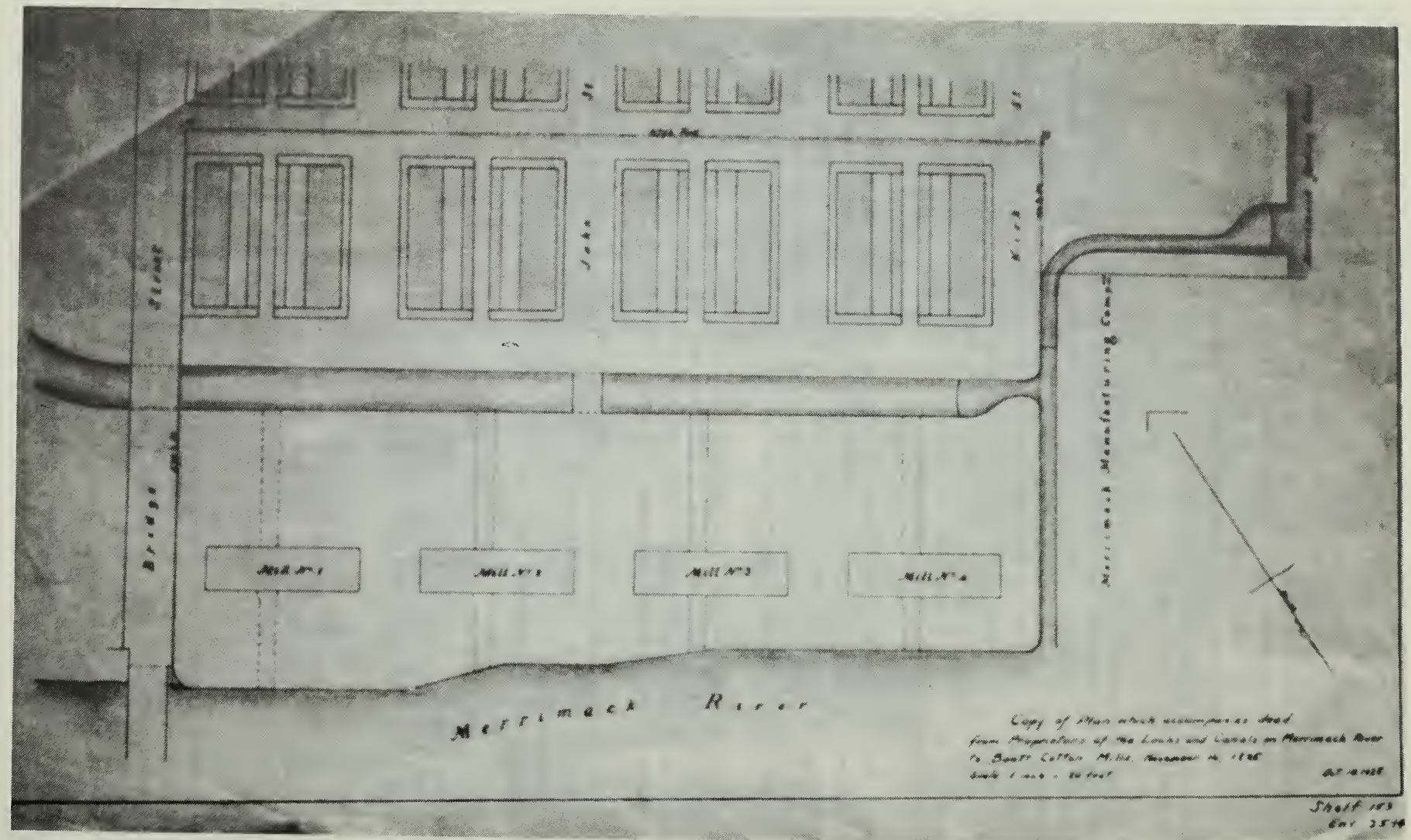


Figure 4-2. Original plan for the Boott Mills boardinghouses, November, 1836. Proprietors of Locks and Canals Collection. Courtesy of the Lowell Historical Society.

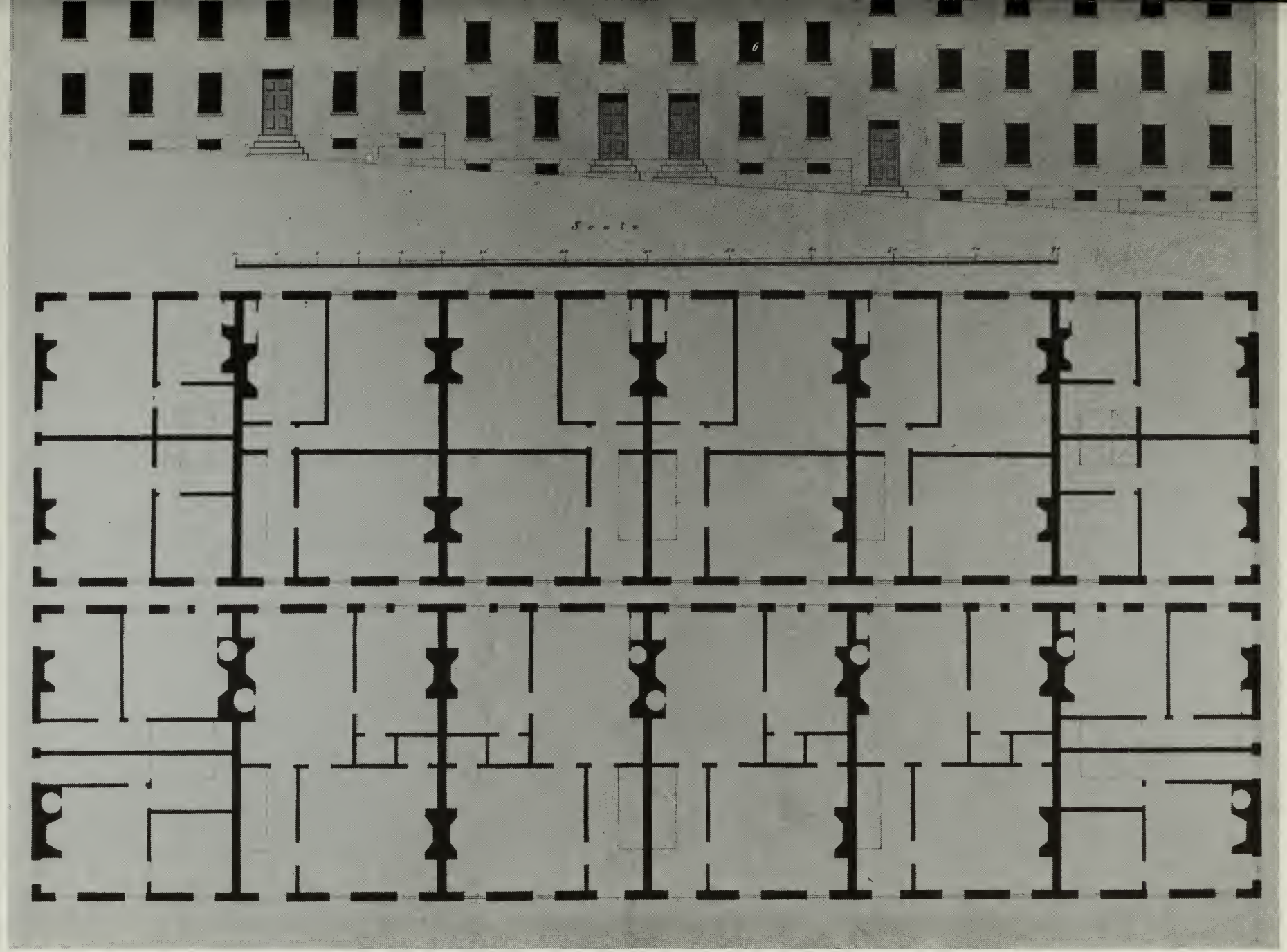


Figure 4-3. Floorplans and elevation for Boott Mills boardinghouses, 1836. Proprietors of Locks and Canals Collection. Courtesy of the Lowell Historical Society.

1920s photographs are shown faced with vertical boarding. These were constructed primarily for storage of firewood, although they no doubt served other purposes as well (see Chapters 4 and 5 for mention of coal and trash storage and presence of privies in these sheds). The 1876 bird's-eye view of Lowell (Figure 4-4) illustrates the sheds as being enclosed on four sides and entered through a series of doors facing the boardinghouses. It is likely that they were internally partitioned in a manner corresponding to the divisions within the main buildings. The 1892 and 1907 Sanborn insurance maps of Lowell (Figures 4-5 and 4-6) seem to indicate that the end portions of some of the woodsheds, which presumably were shared by residents of both of the end tenements, were narrower than the woodsheds behind the boardinghouse units; this evidence is not corroborated by other sources.

Later Buildings

Cartographic evidence reveals that some time between 1850 and 1876, but probably in the 1850s, a large brick block containing 15 units, three and one-half stories in height, was constructed south of French Street perpendicular to the original blocks (no. 10 on Figure 4-1). This is referred to as the "Overseers' Block" on a 1920s photograph taken by John Coolidge, author of *Mill and Mansion* (1942). This block was similar in general appearance to the original boardinghouses (e. g., number of floors, materials, windows, dormers, Dutch gable ends), but it differed in being slightly taller, indicating rooms with higher ceilings. It further lacked the tripartite appearance of the boardinghouse blocks, internal divisions being signaled on the facade only by the placement of doors. Instead of a woodshed behind each unit there was a one-story brick ell with a slightly sloping shed roof. The back portions of each pair of ells turned a 90° angle to join one another in the form of a "U", thus creating a small courtyard in common for both units.

A small one- or two-story wooden structure (Figure 4-1, no. 12) appears on the same Boott-owned parcel to the rear of the overseers' block on two maps from the 1870s, but it is not known whether this structure served a function related to the larger building. A 1901 blueprint based on a survey taken in 1888 (Figure 4-7), on file with the Lowell City Engineer's Office, indicates that the building was a "store house" with an area of 3,648 square feet. No photographs of this structure were located.

During the same period that the no. 10 block was erected (1850-1876), an additional block of four units was constructed on the corner of George and French Streets (Figure 4-1, no. 9). This lot had originally been owned by the Boott Corporation but had been transferred to the Massachusetts Corporation by 1844. It is not known whether the Massachusetts or the Boott constructed this block. Since the early records and accounts of the Massachusetts survive, it should be possible to find this out by consulting the records of the Massachusetts Cotton Mills in the Pepperell Manufacturing Company Collection, Manuscripts and Archives Collection, Baker Library, Harvard University. By 1879 it was being used as a boardinghouse by the Boott. Judging from the 1876 bird's-eye view (Figure 4-4) and other maps, this block was identical in plan and configuration to the original Boott boardinghouses but was half their length. The block was in fact one of the areas that had been projected for future boardinghouse construction on the original Boott plan of 1835 (Figure 4-2). This building also had detached woodsheds similar to those behind the original boardinghouse blocks, but the Sanborn insurance maps (Figures 4-5 and 4-6) indicate that they may have been built as two unjoined structures. As no photographs of the building have been located, there is no visual evidence for construction details such as Dutch gable ends, etc.

A fourth building erected during this time period was a wooden structure near the corner of French and John Streets (Figure 4-1, no. 11), directly behind the woodsheds of the George Street boardinghouse (no. 9). The function of this building is not described on any map, but an 1882 view (Figure 4-8) shows a large woodpile next to it, indicating that it may have been used for wood storage. By 1882 an addition consisting of a wagon house and carriage shed adjoined this

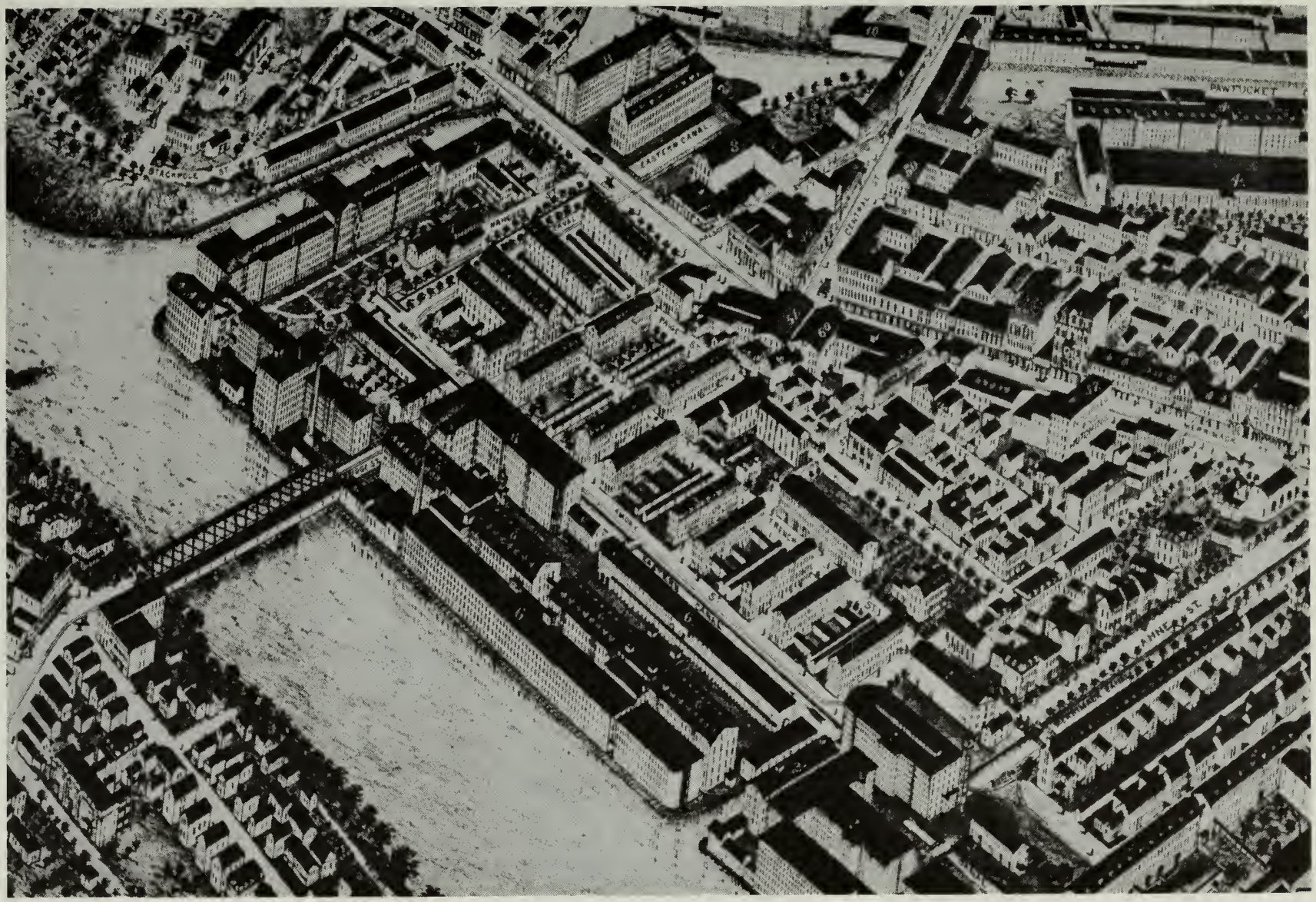


Figure 4-4. Detail of the 1876 bird's-eye map of Lowell showing the area of the Boott Corporation mills and housing.

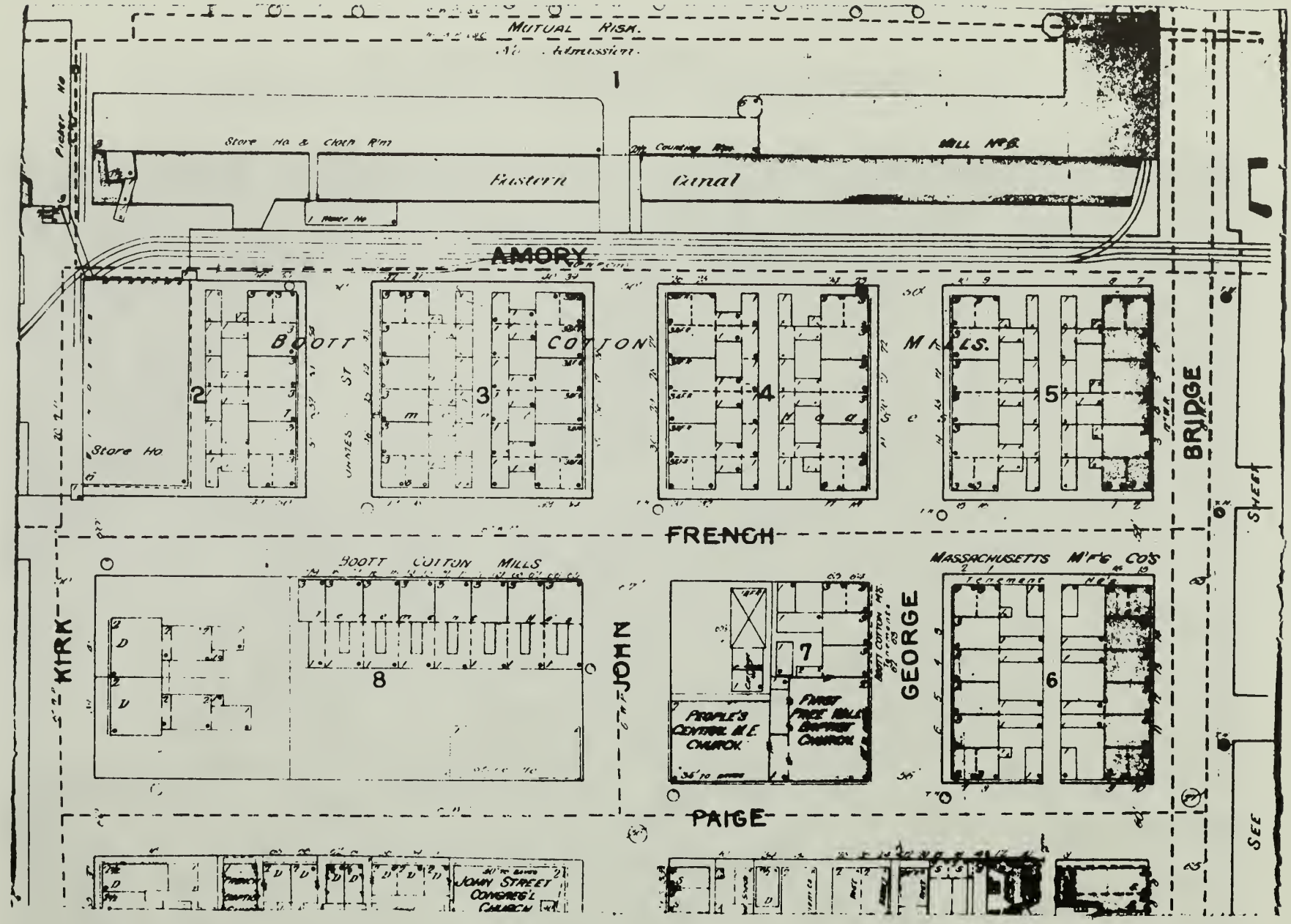


Figure 4-5. Detail of the 1892 Sanborn Insurance Map showing the area of the Boott Corporation mills and housing.

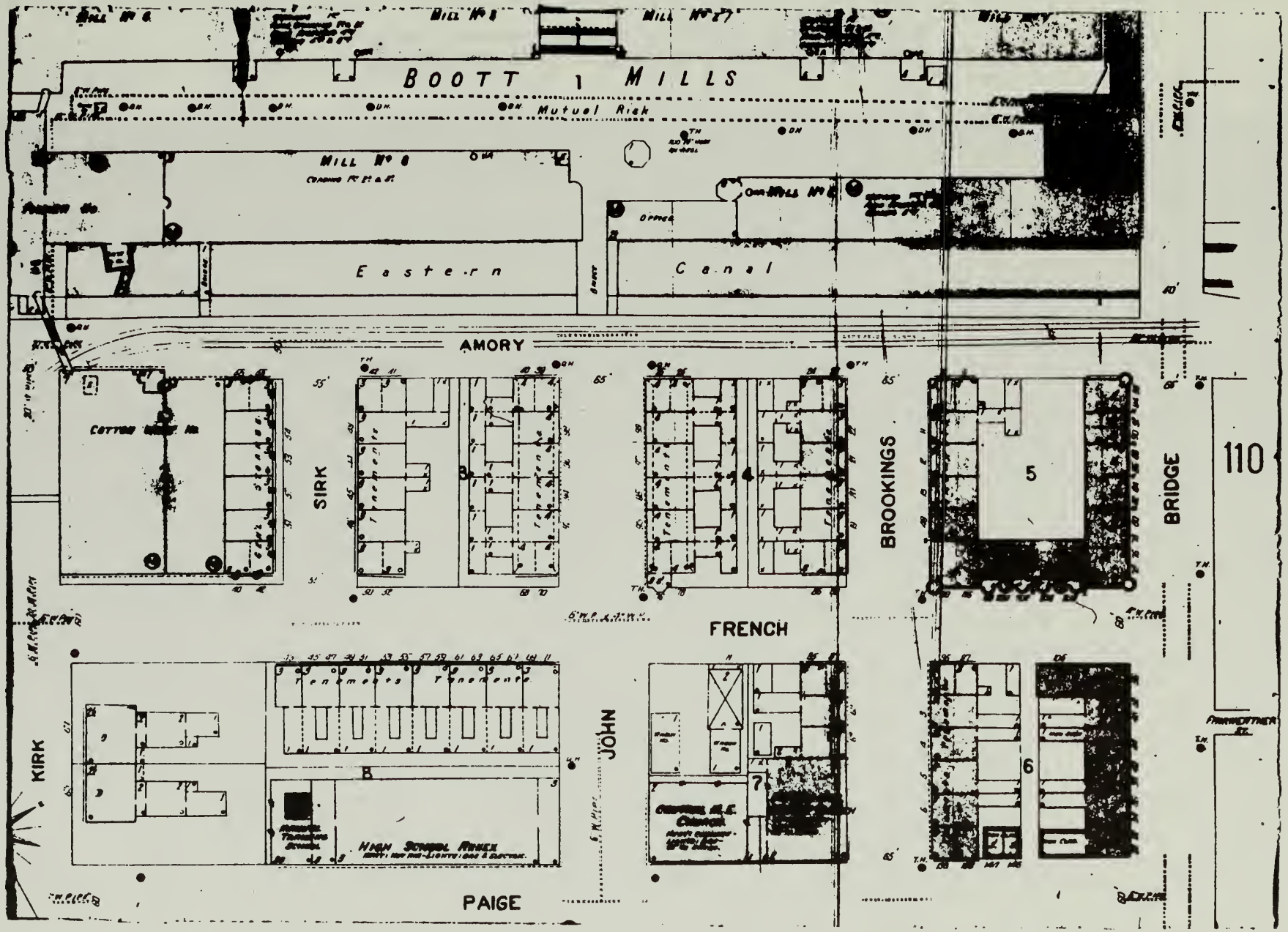


Figure 4-6. Detail of the 1907 Sanborn Insurance Map showing the area of the Boott Corporation mills and housing.

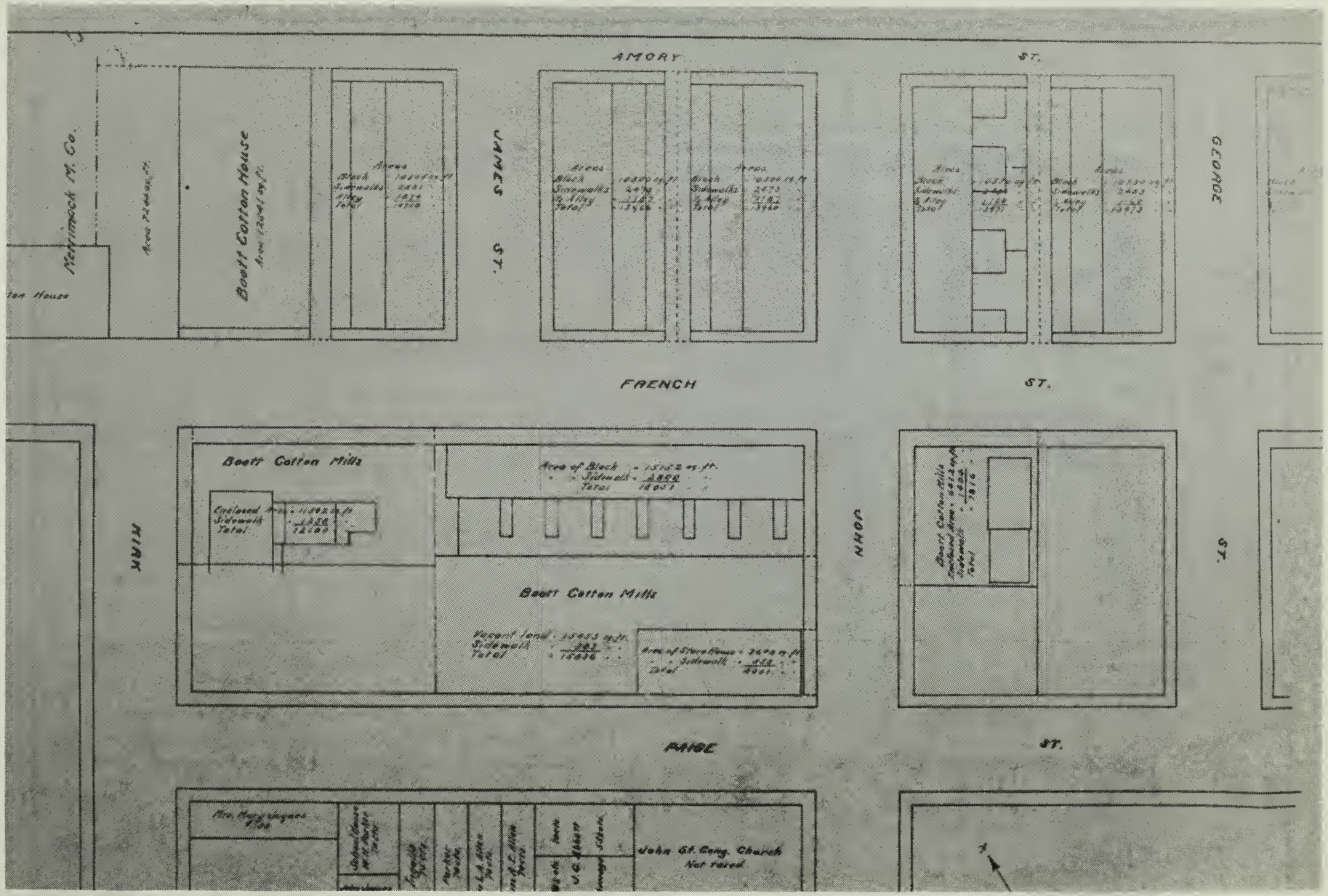


Figure 4-7. Detail of a City Engineer's map titled "Lowell, Mass., May 19, 1888" showing the area of the Boott Corporation mills and housing.

building, and by 1906 a detached, wooden wagon house was erected on the same lot, closer to John Street (Figure 4-1, no. 13). This was the last free-standing building to be constructed by the Boott on any of the parcels under study.

The Boardinghouse Ells

Many of the historical maps conflict wildly regarding the existence and character of ells behind the boardinghouse and tenement units. It is clear that while certain map makers were careful to record such details, others felt it unnecessary to do so with any precision and offered only schematic representations of these ancillary structures. Thus I have proceeded on the principle that the earliest construction date that I can assign to an ell is when it is first depicted on a detailed and otherwise reliable map, despite the fact that later maps may fail to include it or may illustrate it differently. At this point it is possible to present two hypotheses concerning the boardinghouse ells: all of the units had wooden ells when first built, but they were only mapped later, or, ells were constructed at intervals and their appearance on maps is a relatively accurate guide to their construction date. These hypotheses are verifiable through archeological excavation, and it is recommended that future archeological work at the boardinghouse sites undertake this problem as one of its research goals.

The Sidney and Neff 1850 wall map of Lowell (Figure 4-9) shows no ells whatever behind the Boott boardinghouses, but it omits most such structures (i. e., outbuildings and ells) for all of Lowell and cannot be considered accurate in this regard. The 1876 bird's-eye view (Figure 4-4) is far more detailed in its depiction of appendages and shows a repeating pattern of ells linking most of the Boott boardinghouses with their woodsheds. The oblique angle of the bird's-eye view, however, obstructs the perspective on the rear of buildings facing west. While it is highly likely that these west-facing blocks (Figure 4-1, nos. 1, 3, and 5) did have ells by this time, as we know blocks 2, 4, and 6 did, their existence is not firmly documented prior to their appearance on the 1879 city atlas map (Figure 4-10). Blocks 7 and 8 do not have ells in the 1876 bird's eye, but both have them on the 1879 atlas map; by 1876, block no. 9 had two ells behind it.

The ells seem to have varied in size and construction material, perhaps because they were built at different times. It is possible, for instance, that several building campaigns are represented by the sporadic appearance of these additions. The majority of the ells (including those of blocks no. 2, 3, 4, 6, 9, and some of those behind no. 1) appear to have been simple one-story connectors linking each unit with its woodshed (see Chapter 5 for a boardinghouse resident's recollection of this arrangement). The ells were of wood and had pitched roofs. The ell behind each boardinghouse unit shared a party wall with that of the next, although the two ells were under one roof. Only the rear tenements at the ends of each block had access to ells, some of which were noticeably shorter than those of the larger boardinghouses and therefore did not abut the woodsheds.

A second type of ell that appeared on the 1879 map also served two boardinghouse units but was wider than it was long and did not extend to and abut the woodsheds. One such ell served two units of block no. 1, and all of the units of blocks 7 and 8 had them. These stubby ells had disappeared, been extended, or been replaced by the conventional connecting ells by 1892, according to both maps available for that year (Figure 4-5).

Block no. 5 appears to have had brick ells by 1879, a treatment given to block no. 4 by 1892. Early maps also show the woodsheds behind these ells as being of brick construction, although twentieth-century maps (e. g., that of 1928) indicate that the brick ells abutted the original wooden sheds. The archeological testing has corroborated the evidence of the twentieth-century maps (see Chapter 7). Perhaps the nineteenth-century maps, one of which is an 1898 survey commissioned by the corporation (Figure 4-11), reflect intentions never carried out; the Sanborn insurance maps are normally extremely accurate, however, so this discrepancy remains something of a mystery. It further seems unlikely that the Boott would have been expending much on its

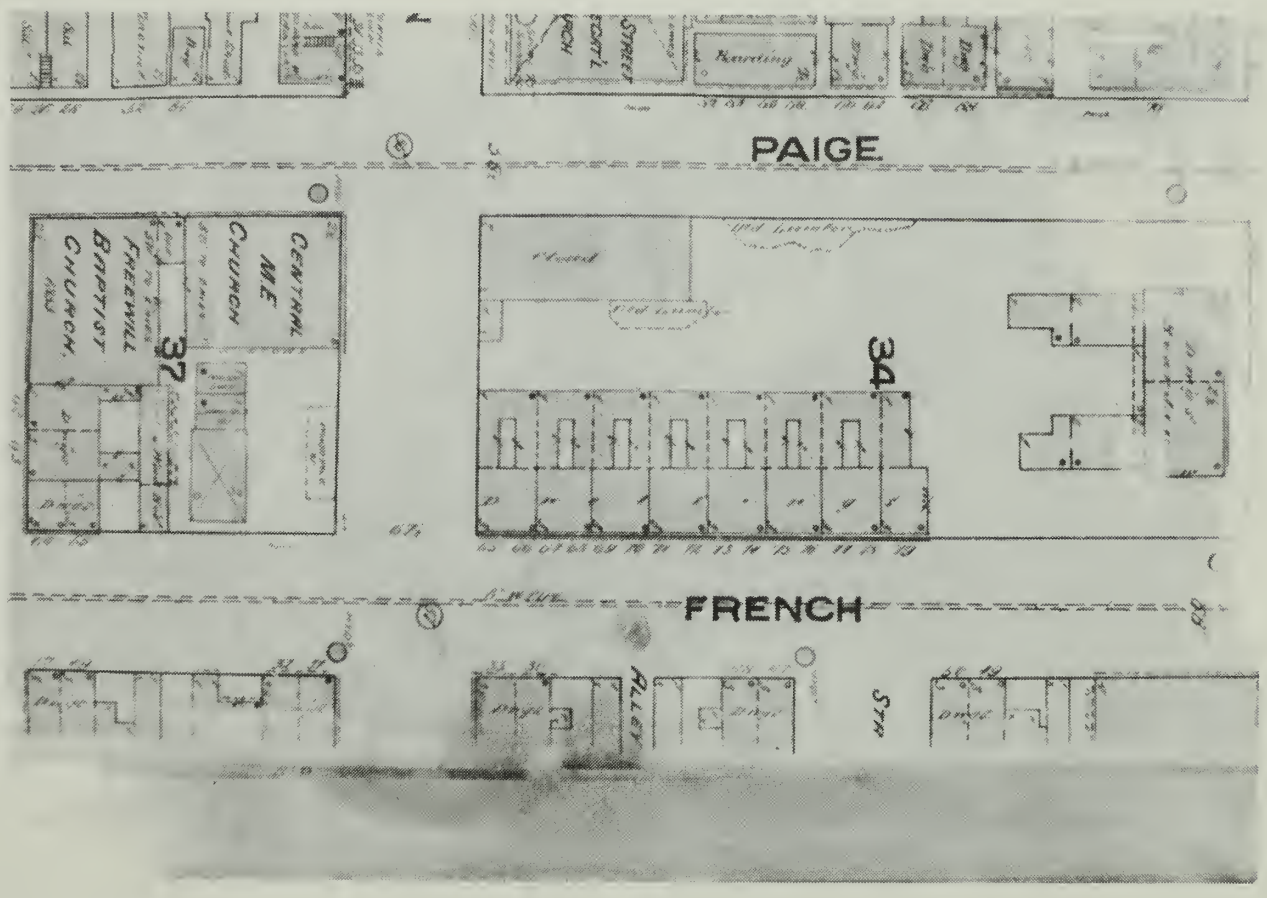


Figure 4-8. Detail of the 1882 Sanborn Insurance Map showing the area of the Boott Corporation mills and housing.

Figure 4-9. A portion 1850 Sidney & Neff wall map of Lowell indicating the area of the Boott Corporation mills and housing. Courtesy of the Lowell Historical Society.

housing at this point, except when required to do so, as with the installation of water closets (see Chapter 6).

Mansard Roofs on the John Street Blocks

Between the end of the Civil War and 1879, block no. 5, on the east side of John Street, had its roof raised on both sides to form a mansard. As this was also the first block to receive brick ells, it is probable that both alterations were planned and executed simultaneously. The new roof must have increased the available floor space on the uppermost story. What is more, it greatly increased the number and size of dormers, allowing one for every window bay in the building, each being of a size commensurate with that of the regular windows. The change in roof style required only slight alterations to the gable ends of the building, namely, the construction of thin brick "ears" beside the chimneys.

When block no. 4, on the west side of John Street, received its brick ells, it was similarly "mansardized." This gave John Street, the main approach into the millyard, an updated, more stylish appearance than the rest of the boardinghouse blocks. Whether this treatment reflects preferential attention to the John Street blocks because of the status of their occupants or simply because it *was* the entry to the millyard is unclear, but no other blocks were renovated in this manner.

An Addition with Bay Window

The 1907 Sanborn insurance map (Figure 4-6) shows a small three-story addition with a bay window on the corner of the east side of French and John Streets (Figure 4-1, no. 5). A 1929 photograph clearly illustrates this bay window, although it is not as easy to discern the addition to which it is attached. Oral history evidence indicates that a grocery store once operated out of this unit, and the alterations may have been made for this purpose (see Chapter 5).

Sale and Demolition

The demolition of the boardinghouses occurred in a piecemeal fashion over a period of 60 or more years. In 1878 or 1879 block no. 1 was pulled down along with its woodshed, and Cotton Storehouse No. 1 was erected in its place. The exact date of this event is difficult to determine from the maps: that of 1878 shows the storehouse in place, while that of 1879 (Figure 4-10) shows the boardinghouse block still standing. Similarly, the two maps of 1892 disagree as to whether or not no. 2 is still standing as a boardinghouse block with ells intact or as a storehouse with an additional storehouse to its rear. By 1899, however, no. 2 had definitely been converted to a cotton storehouse and its ells demolished. The discrepancies between the 1892 maps, which are otherwise reliable documents, probably indicate that the conversion happened within a year of that date.

Documentary evidence reveals that Cotton Storehouse No. 1 was completed in 1880. It was built in the Italianate style, was six stories high, and was connected to the #9 Mill picker house by an enclosed bridge across the canal (Shepley et al. 1980: 16). Storehouse #3 was created through remodeling block no. 2 in the early 1890s. The northernmost section of the roof was changed, and most of the interior detailing and the original floorplan were obliterated; the remainder of the roof was altered sometime before 1932 (Huggins 1985: 6-7; Shepley et al. 1980: 18). A third building, Storehouse #2 (known recently as the "link building") was completed in 1900. This building was placed in the area that had comprised the backlots and alley between the two boardinghouse blocks (Huggins 1985: 7; Shepley et al. 1980: 16).

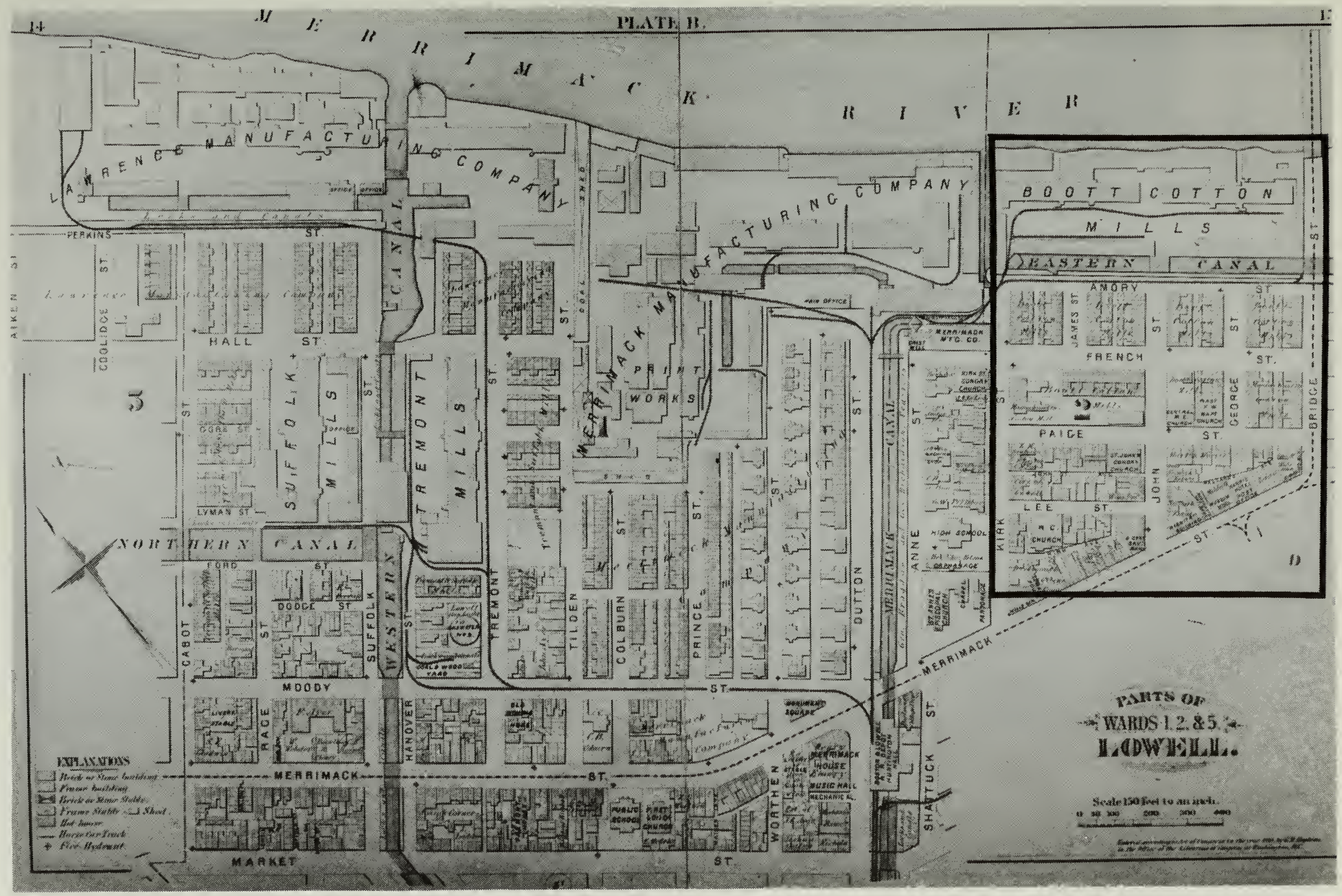


Figure 4-10. Detail of the 1879 Lowell City Atlas map showing the area of the Boott Corporation mills and housing. Courtesy of the Lowell Historical Society.

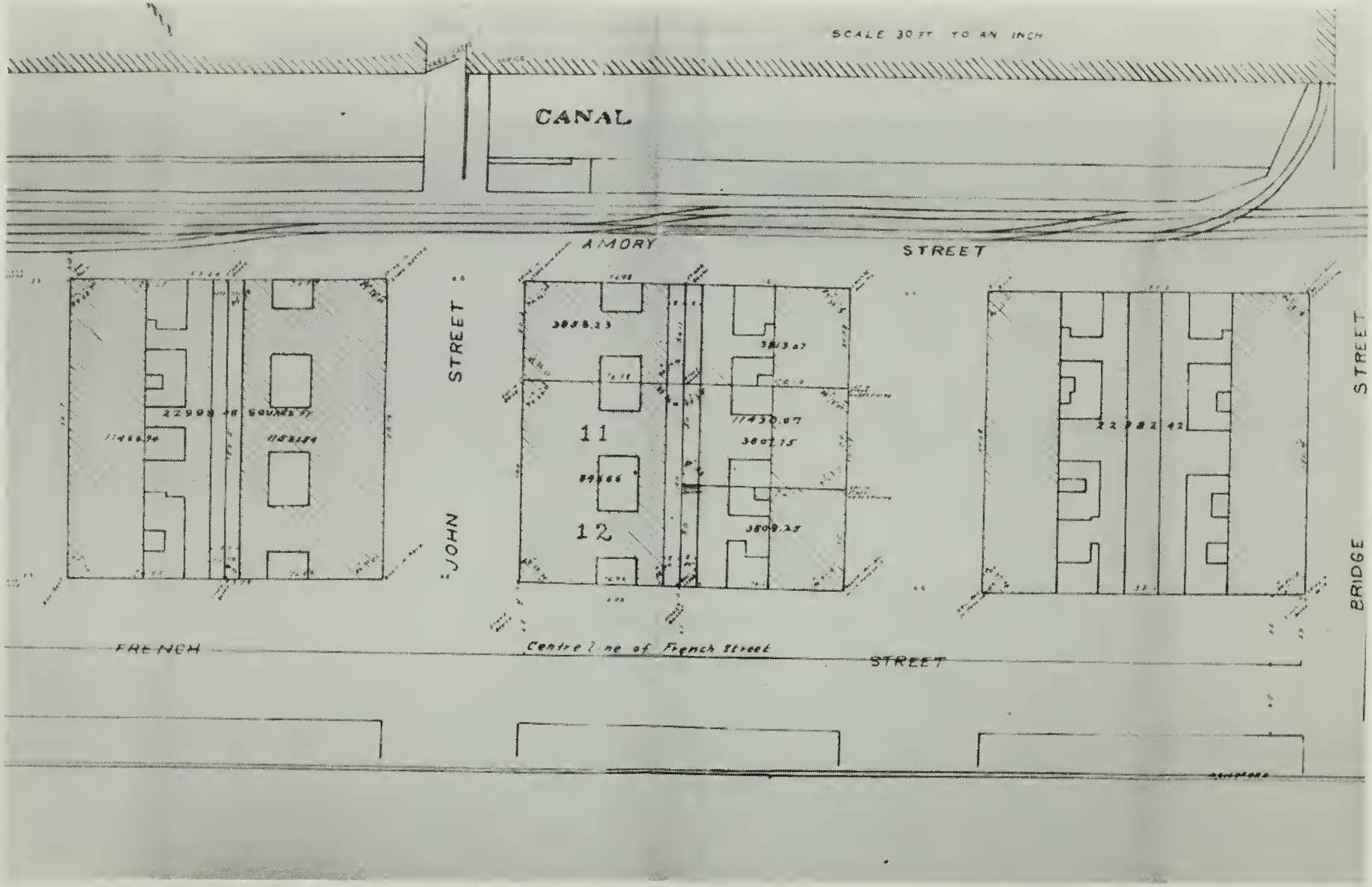


Figure 4-11. Detail of an 1898 map titled "Land Belonging to Boott Cotton Mills." Courtesy of the Proprietors of Locks and Canals.

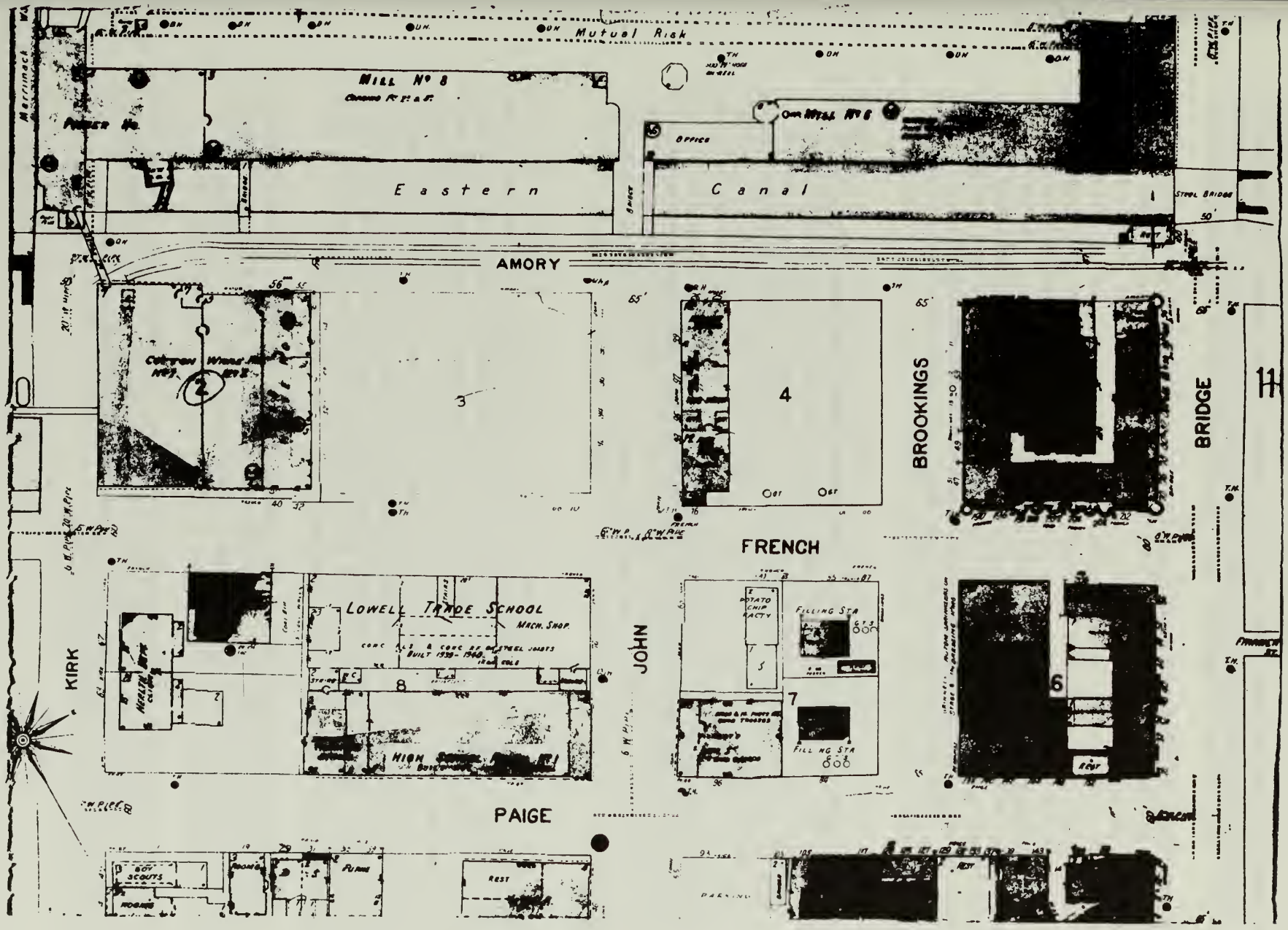


Figure 4-12 Detail of 1907 Sanborn Insurance Map (corrected to 1951) showing the area of the Boott Corporation mills and housing.

Around 1892, block no. 9 was transferred to the Massachusetts Corporation (again, a discrepancy between the two maps of that date make it a likely date for the event). In 1906 the block was owned by Martha Hubbard, and in 1924 it had become the property of the Episcopal Church. The block survived as late as 1936, but its ultimate demolition date is not known [need to check City of Lowell Building Department records]. By 1951, a gas station occupied the lot.

Between 1898 and 1906 the corporation deeded control of blocks no. 5, 6, 7, 8, and 10 to Saiman Sirk, who by 1907 had completed an ambitious remodeling of blocks no. 7 and 8. The ells and sheds of the buildings, except for those behind one end unit of no. 7, were cleared away, and a brick link one story higher than the boardinghouse, but of the same width, was constructed along French Street between nos. 7 and 8. No. 8 and three units of no. 7 were raised an additional story, and their street-face elevations were entirely resurfaced with a brick slightly longer than the original, laid in a different bond with different-colored mortar than the original. Numerous other changes were made, including renovation of the first floor of the Bridge Street elevation for retail businesses. The new structure was dubbed "The Sirk Building." A board of trade publication of 1907 calls it "Lowell's largest apartment block". The five untouched units of no. 7, which apparently were not linked internally with the Sirk Building, continued to stand unaltered until May, 1921, when they were replaced by an automobile garage.

No. 10, the overseers' block on French Street, passed from Sirk to F. R. Brookings by 1924 (by this time, the Sirk Building was owned by Samuel Katz). The French Street block was razed in 1937 (see Table 5-1), and the Lowell Trade School was built on its site in 1939-40.

By 1924, the Boott Corporation had repurchased nos. 5 and 6. It continued to dismantle pieces of the remaining blocks. Between 1892 and 1906, half of the sheds and ells of no. 3 were removed, and by 1924 the block stood entirely denuded of its rear appendages, probably indicating that its function as a boardinghouse was phased out gradually during this period (In 1917, #46 Sirk Street was a lodging house, by 1918, #46 Sirk and #50 and #52 French Street were used for storage and the rest of the block appears to have been vacant. See Chapter 5 and Appendix B, part 1, *Lowell City Directory* data and cross reference by streets.) A 1928 map shows the building being used for storage, a function it had taken on much earlier. The block was finally torn down in April, 1934.

Block no. 5 had three of its units--those on the corner of French and John Streets--demolished in or just before 1931 to make way for an automobile service station (Parchert Tire Service). In that same year architect Harry Prescott Graves submitted drawings to the Boott Corporation for an additional building as part of the Parchert complex. The unexecuted plan was to remodel the three end units of block no. 6 by removing the upper story and a half and giving the building a flat roof. The building would have large openings facing the existing garage cut into it in order to serve as a repair garage. Ells and sheds between the existing and proposed buildings had already been removed and the space asphalted. Grave's design was never acted upon and Parchert expanded instead by demolishing all of no. 5 and building two more one-story sections on the foundations of the former boardinghouses. This was fully accomplished by 1936.

At the same time that Graves proposed that the three end units of no. 6 be remodeled as a service station, the Boott commissioned a revised floorplan of the same units, perhaps to weigh the advantages of rehabilitation. Such work was never carried out, however, for in August, 1932, the entire block was demolished. The resulting space was made part of the Parchert parking lot.

Block no. 4 was the last of the original boardinghouses to be pulled down. Although shorn of its ells and woodsheds in May, 1934 (by now, a recognizable sign of approaching doom), it continued to stand until February, 1942 (City of Lowell Building Department records). By 1951 its site was occupied by a coal yard (Figure 4-12).

Suggestions for Further Research

It should be apparent that, as I stated in my introduction, the research presented here must be correlated with deeds and building permits to create an entirely accurate sequence of events reconstructing a more thorough physical history of the buildings.

Listed below are three other avenues of investigation that might prove useful in developing a fuller architectural history.

1. The rear walls of the Sirk (now known as Surf) Building are almost certainly identical with those of blocks 7 and 8. They extend to four stories, however, and my eye cannot distinguish a change in the character of the brick between the third and fourth stories, where it would be expected to occur. Could a story have been added to one or both blocks while they were still in Boott ownership? The uppermost brick courses should be examined more closely. The interior of the Sirk Building may also contain some original fabric that could be useful in reconstructing a boardinghouse interior.

2. The Lowell newspapers should be examined for those months in which various building/demolition events are known to have occurred. An article on the Sirk Building doubtless appeared, and possibly some photographs of the boardinghouses before their demolition appeared.

3. The Flather papers at the Special Collections Department of the University of Lowell, for which I only examined the index, might shed some light on the uses of buildings 11, 12, and 13.

Chapter 5

A PRELIMINARY REPORT ON THE DEMOGRAPHY OF THE BOOTT MILLS HOUSING UNITS #33-48 1838-1942

by Kathleen H. Bond

Introduction

The last of the Boott Cotton Mills units #33-48, which comprised two back-to-back boardinghouse blocks that faced James (later Sirk) and John Streets, respectively, was demolished on February 25, 1942 (Building Department Records, City of Lowell). From the time of their construction in the late 1830s, the rows housed a large number of people of diverse ethnic backgrounds and served a variety of functions. They were originally constructed as boardinghouses and tenements for the Boott Cotton Mills Corporation. Before their demolition, however, the structures had also been used as lodging houses and storage facilities, and some were vacant.

It should come as no surprise that these housing blocks were, for much of their existence, Boott Corporation housing. Yet a good deal of earlier research into corporate housing in Lowell dealt chiefly with the years prior to 1880, despite the fact that, especially in the case of the Boott, textile mills continued to operate and the corporations continued to rent housing to their workers until the early twentieth century. While it is without question important to learn more about both the Boott units and other Lowell boardinghouses prior to 1880, it is equally necessary to study their use and the changes that occurred within them into the twentieth century. As Randolph Langenbach has succinctly stated

> Because of the historical emphasis on its early decades, there is a danger of overlooking the valuable lessons that a more comprehensive treatment might reveal. By celebrating the beginning years of Lowell, it is easy to ignore the later evolution of the city as technology advanced, as the community began to mature, and as immigrants began to displace the native workers. (Langenbach 1981: 91)

This chapter examines a wide variety of sources: Federal Census and Lowell City Directory data from 1838 to 1942, Boott Corporation correspondence, a boardinghouse keeper's probate inventory, an early twentieth-century photograph of a boardinghouse dining room, and information obtained in an interview with a former boardinghouse resident. The differences and similarities between the earliest and most recent censuses available--1840 and 1910--are first discussed. Included with the 1910 census data are Mrs. Blanche P. Graham's memories of her life in a boardinghouse at that time, along with a discussion of a rare photograph of a boardinghouse interior. Finally, all of the sources for the intervening years are examined and the information for residence in the Boott corporate housing after 1910 is presented.

This research helps to document the demographic shifts that occurred and the changes in the function of the units. Further, the oral history provides rich detail about the housing that otherwise would have remained hidden from view. This body of data will, it is hoped, help provide part of the background necessary for the proposed archeological study of the Boott Corporation housing.

1840

In 1844, six years after the completion of the Boott Corporation housing, B. F. French, agent of the Boott Mills, wrote a lengthy letter to William Boott agent of the Locks and Canals Company and brother of Merrimack Manufacturing Company treasurer and agent, Kirk Boott (Massachusetts House of Representatives [hereafter MHR] Docket #50, 1845). The correspondence is a defense of the working and living conditions at the Boott Mills and must have been initiated by the petitions for a 10-hour work day that had been sent to the Massachusetts legislature in the 1840s by the Lowell mill girls (Dublin 1919: 108). The letter contains the following description of the housing:

> There belongs to the establishment, for the accomodation of the hands, 32 boardingh houses, in which, with but few exceptions, all reside, both male and female. Each house is calculated to contain with comfort about 30 inmates, besides the family of the tenant. The are 32 smaller tenements, for men employed in the yard who have families. These 64 tenements are comprised in 8 blocks, built of brick and slated (MHR Docket #50, 1845: 18).

Of the 16 units research for this project, tenements #35-38 and #43-46 were originally used as the boardinghouses to which French refers, and the end units #33, #34, #39, #40, #41, #42, #47, and #48 housed largely the male employees and their families. The first year that these units were listed in the *Lowell Directory* was 1838 (see Appendix B, part 1). The blocks that contained units #1-14 had appeared two years earlier, with units #15-32 following in 1837; units #49-64 were, like #33-48, listed for the first time in 1838. This clearly reflects the order in which the blocks were built and occupied.

In 1889, the city of Lowell renumbered its streets (Engineering Department Records, City of Lowell). In the 1900 census, only former units #33-34 and #47-48, on French Street, were recorded with the new numbering of #68-70 and #50-52 French Street. The other Boott units at #35-38 John Street, #43-46 James Street, and #39-42 Amory Street, however, retained the numbers assigned by the corporation (see Figure 4-5). By 1910, the John Street units had been changed to #92-98. Amory and James Streets, because they were private streets, were never renumbered. James Street had, however, been renamed Sirk Street, presumably for its new owner, Saimon Sirk, who had purchased much of the Boott housing by 1907. Sirk was listed in the 1905 *Lowell Directory* as "in real estate."

When the boardinghouses in Lowell were first built, it is clear that the residents were largely New England-born mill girls (see data presented in Thomas Dublin, *Women at Work,* 1979). Those few who were not native born were probably Irish. The manuscript census data for 1840 is incomplete (see Appendix B, part 2, for all census data), but it is apparent that the residents of the Boott boardinghouses were predominantly female. Unit #46 was an exception: John B. Warren, overseer, was head of this unit, and he boarded eight men. (The *Lowell Directory* lists more names for this unit than does the census.) Another man, Nason C. Martin, ran boardinghouse #43, but this unit was not listed in the census. Ruth Frye and Eliza Lufkin were both listed as keepers of unit #44, housing 35 and 33 people, respectively. One of them probably headed #45, as this unit was omitted from both the census and the *Directory*. The average number of residents for the seven boardinghouses listed in the 1840 census was 29.7. This corresponds very closely to agent French's estimate for the number of boarders per unit.

Because of the strong paternalistic attitude of the corporations during the 1830s and 1840s, an attitude thought necessary to attract and retain a native-born female workforce (Dublin 1979), a myth has grown up that the population of the boardinghouses was entirely female in composition and that the boardinghouses were almost always run by widows (e.g., Robinson's *Loom and*

Spindle, 1898, and Coburn's *History of Lowell and Its People,* 1920). In the same letter to Mr. Boott, B. F. French states that while many of the male workers, especially the overseers, were married, the other employees, both male and female, were also housed on the corporation. The unmarried workers were, however, strictly segregated by sex. He does characterize the keepers as being unmarried women, but he includes both widows and "maidens" in this category. French asserts that "many of them have been accustomed to better circumstances, and have been compelled by misfortune to resort to this employment for a livelihood" (MHR Docket #50, 1845: 22).

The data presented here support both Mr. French'es statements and the recent findings in *The Boardinghouse System in Lowell* (Center for History Now 1983) that the boardinghouses were neither exclusively female occupied nor always kept by widows. The present research does not, however, substantiate the conclusion of the Center for History Now report that the Boott boardinghouses were less crowded than those of the Lawrence Corporation. According to that report, in 1836 the Lawrence housing averaged 30.4 persons per boardinghouse, only 0.7 persons more than the average for the Boott units researched in this study.

Almost all of the tenements appear to have housed male employees and their families. Numbers 39, 40, and 47 were either formally or informally subdivided, probably by floors. This is implied by the fact that occasionally the censuses and directories listed several families as separate households at the same address. Such instances have been noted in Appendix B, part 2, as, for example, #47A and #47B. On the other hand, it was far more common for the census to record several families at the same address as all part of one household. This suggests that families or individuals who rented tenements from the corporation may have been taking in boarders. Samuel F. Dresser, a stonemason who headed unit #47A, had at least four male boarders, three of whom were stone layers. The five tenements listed in the 1840 census averaged five people per household.

In 1838, the first year in which these units were included in the *Lowell Directory*, tenement #34A was designated as a boardinghouse run by Mary W. Watson. If this information is correct, it suggests that at least for the first year of operation, the demand for housing was great enough that units intended to house skilled operatives and their families were instead used as boardinghouses for the more numerous unskilled workers. This was the only year in which a tenement unit was labelled as a boardinghouse in any of the directories until 1910. The occupations of the residents were not recorded in the 1840 census, but the vast majority of the 239 people who lived in these units were surely Boott employees. There were, however, exceptions. Information in the 1838 and 1839 *Lowell Directory* reveals that Charles Giles and True W. Brown were housewrights, that Isaac Colby was a cordwainer who worked on Middle Street, and that Daniel Reed was an employee of the Hamilton Mills. It is also possible that Samuel Dresser and his men were employed elsewhere, although it is more likely that they were engaged in construction activities for the Boott Corporation. The presence of such persons is, however, indicative of the scarcity of housing in Lowell at this time.

Apart from references to other corporate housing in Lowell, there are few documentary sources that refer specifically to the furnishings or appearance of the living and sleeping quarters of the Boott employees. A document such as a boardinghouse keeper's probate inventory would provide a detailed picture of furnishings and perhaps room use, but no probate records for any of the Boott keepers or tenement heads could be located. Clarissa Coburn, who was keeper of #45 in 1844, died in Lowell in that year (Vital Records, Lowell: 62), but her estate was not probated.

The lack of a Boott boardinghouse keeper's inventory makes the comparative examples located by Priscilla Brewer in her research for the Center for History Now all the more valuable. Brewer was able to locate three probate inventories for keepers who headed boardinghouses for other corporations. The 1842 inventory of Merrimack Corporation keeper Abigail Weston's property illustrates kinds and quantities of objects required to furnish and run a boardinghouse, while reflecting the consumer tastes of the day.

Lowell Annual Advertiser.

OFFUTT'S

FURNISHING WARE ROOM, IS AT

No. 5 Lowell street, nearly opposite the Market,

And is calculated for furnishing boarding and other houses, with almost every article needed in house keeping, such as Furniture, Feathers, Beds, Bedding, China, Glass, Crockery, Tin, Iron, and Wooden Ware, Looking Glasses, Clocks, &c.

All who wish to buy low and for cash, are respectfully invited to call in before purchasing elsewhere, as the subscriber will pay due regard to hard times, and sell at prices that must suit all reasonable buyers.

N. B.—Goods all kinds sold at Auction and Beds to let as usual.

CHARLES OFFUTT.

Figure 5-1. An 1838 advertisement for Offutt's Furniture from the *Lowell Directory*.

WEAVER & BROTHERS'

FURNITURE WARE-ROOMS,

WYMAN'S EXCHANGE,

Corner of Merrimack and Central Streets, Lowell, Mass.

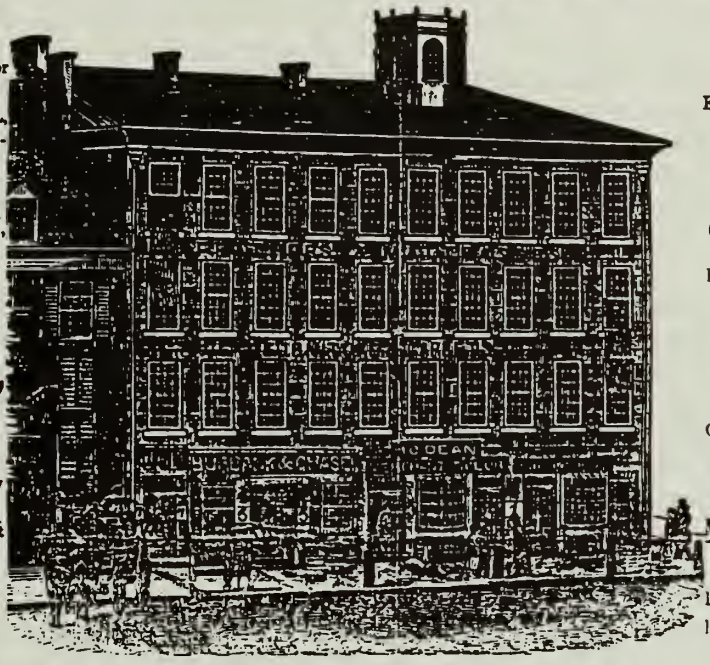
Constantly on hand, and for sale, WHOLESALE & RETAIL, the most complete and general assortment of

FURNITURE, CARPETS AND FEATHERS,

AND OTHER

Furnishing Goods,

of any Establishment in New England; not so many of one kind, but every, *affording customers an opportunity to complete their purchases at one place.*



We believe that our ESTABLISHMENT is, and shall be, the

BEST

AND

CHEAPEST

place in the States, at which to buy goods. No pains will be spared to make it so.

Our goods are selected and bought at the

LOWEST

MANUFACTURERS' PRICES.

The quality of very low priced goods, (of which we have a large stock,) is good.

The Richest and most fashionable Drawing-Room and Parlor FURNITURE, in part or complete sets, made to order, if desired, warranted first best quality, (no extra charge.)

Every customer will be convinced of the above statements after having examined our Stock. *Our prices are uniform, and none lower. An honorable and satisfactory description of our goods will be made to all customers. No advantage will be taken of those who are not acquainted with the quality, prices, or style. Each article is warranted to be as we represent.*

Orders, and the trade from the country will be promptly attended to.

We do know that no one buys goods of equal quality, of Manufacturers, lower than we do, and that they cannot give more goods of the same quality, for less money. Our business is such that we are enabled to sell goods at much less prices than heretofore.

Churches furnished with CUSHIONS and CARPETS at wholesale prices. Desks, Book-Cases, Ottomans, Tabourets, and Fancy Chairs, made to order; Carpets made, and put down. Curtains made, and put up.

We UPHOLSTER and MANUFACTURE, in our own establishment, any goods required.

Our stock consists of COMMON SOFAS, SOFA BEDS, FRENCH SOFAS, TETE A TETES, different styles, in plush, damask, or hair cloth. A new pattern of Sofa Beds, giving a nice spring mattress, saving the expense of a feather bed. It can be opened out, and put up in two minutes—is much better than any before made, giving sofa and bed at one half the usual price of each. Tabourets, Divans, Pier Seats and Lounges, Large Easy Chairs, Rocking Chairs, different woods and patterns. Parlor, Squab, and Spring Seat Chairs—mahogany, black walnut, imitation rosewood, imitation black walnut and mahogany cane seat chairs, of many different patterns and styles of finish. All kinds of common wood and cane-seat Rocking Chairs. Centre tables—mahogany, black walnut, and marble tops, oval, round and antique styles.—Commode, Pier, Occasional, Side, Card, Teapoy, Extension, Grecian, Pembroke, and common pine Tables. What-Nots and Stands, of all kinds. Secretarys, Dress and Common Bureaus, Toilet Bureaus, and Dry Sinks. Roll French, French Windlass, Antique and common patent slat and rod anti-bug bedsteads, for public and private boarding-houses, —which will be furnished with furniture and bedding complete at wholesale prices.

LOOKING GLASSES, in gilt, mahogany, or black walnut frames, from the lowest to the highest value.

CHRONOMETER, eight day, and thirty hour CLOCKS, new patterns—Church, Counting Room and common Clocks.

Complete sets of black walnut, mahogany, or landscape painted CHAMBER SETS, which furnish a room richly, for a low price.

Pure hair, cotton, wool, husk, and palmleaf MATTRESSES. Choice Northern kiln-dried Live Geese, Russia and Hen's FEATHERS. Bed Ticks, Blankets and Comforters. Curled Hair, Moss, Palmleaf and Husks, in large or small quantities. Table Oil Cloths, American and German. Silk and worsted Curtain Stuffs; French Union do. Turkey red, figured and plain, do. Painted landscape and other Curtains. Curtain Patch, Cornices, and Cornice ends. Holders, Band and fixtures of all kinds. Tassels, Cords, Picture Cords, etc., etc. ☞ Any UPHOLSTERY Goods furnished at short notice.

CARPETING—Imperial Three Ply, Double Super. Ingrain, Super. Ingrain, Extra Fine and Fine, from the *Lowell Power Looms*, producing Carpets *unequalled in beauty of style and richness of colors*, having a *smooth, even* finish, causing them to wear much longer than other Carpets, the prices being lower according to the quality. Also, low priced all wool Carpets—Cotton and Wool Ingrain do.—Royal Damask Venitian Brussels Stair do.—Royal Twilled Venitian do.—Plain Twilled Venitian do.—Heavy Plain Venitian do.—Common Plain Venitian do. A few pieces BRUSSELS CARPETS. ☞ OIL CLOTHS, all widths—MATTINGS—RUGS—STAIR RODS—English DRUGGETS—MORINES—DAMASKS—COTTON BOCKINGS—Sheep Skin and other MATS—with many other Goods not enumerated.

Our Terms are Cash, or approved credit.

B. H. WEAVER,
JOHN WEAVER,
C. G. WEAVER.

Figure 5-2. Weaver & Brothers broadside (ca. 1849-1858) for their furniture ware-rooms. Courtesy of the American Antiquarian Society.

Included in Mrs. Weston's probate inventory are 40 chairs, 14 feather beds, five common bedsteads and trundle beds, three French bedsteads, and 32 comforters. She also owned a variety of china and metalware, including 72 printed and 30 edged plates, 30 teacups and saucers, 81 pieces of tinware, and 24 Britannia tumblers. Mrs. Weston must have also kept live poultry, presumably as a source of fresh eggs, because two hens and a hen pen are listed in her inventory. The numbers of serving vessels, chairs, and comforters suggest that Mrs. Weston may have had more than one lodger per bed (there are 26 beds in all, with a larger number of comforters) or that she boarded more persons than the number who resided in her boardinghouse, since she could seat and feed up to 40 persons.

The sheer quantity of items in Mrs. Weston's inventory reveals that she probably purchased goods and furnishings at wholesale prices from establishments such as the "Furniture Ware-Rooms" that advertised in the *Lowell Directory*. In 1838, Offutt's Furniture Ware-Room (Figure 5-1) claimed to furnish "boarding and other houses with almost every article needed in house keeping." Keepers who did not purchase furnishings could rent them, as Offutt's further advertised that they would rent beds "as usual."

Weaver & Brother's, a firm that was in business, according to the *Lowell Directory*, from 1849 to 1858, circulated a highly detailed broadside (Figure 5-2) that was discovered in the collection of the American Antiquarian Society by Richard M. Candee. This advertisement not only describes many different types of sofas, chairs, tables, and bureaus available for purchase, but also features "Full French, French Windlass, Antique and common patent slat and rod anti-bug bedsteads, for public and private boardinghouses--which will be furnished with furniture and bedding at wholesale prices."

1910

By 1910, the continuous flow of different immigrant groups into Lowell during the preceding 70 years, combined with the rise of the family labor system and the sale by the Boott in the early 20th century of its housing, caused the form and composition of that housing to differ dramatically from what it had been when the rows were first built.

Not all of the units appear in the 1910 census. Whether the missing units were actually vacant, were included under another number, or were missed by the enumerator is difficult to determine. In the census, however, #44 and #45 were listed as one unit; it is reasonable to assume that others may have been combined as well. If any of the units were vacant, they remained so only temporarily. In the Cross Reference by Streets found in the 1917 *Lowell Directory* (see Appendix B, part 3, for all Cross Reference data), many of the numbers missing from the 1910 census are listed as occupied.

The four units that appeared in the 1910 census that were originally built as tenements were #50, #68, and #70 French Street, and #41 Amory Street. They housed eight, 22, 15, and six people, respectively. This was an average of 12.8 inhabitants per unit, which, compared with the figures from 1840, was a considerably larger number of people in the tenements. The tenements in 1910 were overwhelmingly Polish in composition, with both families and unrelated single boarders residing in them. Number 68 and #70 French Street clearly had large numbers of boarders, and, in fact, had boardinghouse keepers listed as the heads of these units.

There were no Poles residing in any of the John and Sirk Street boardinghouse units. The absence of Poles in these units reflects their position in Lowell at that time. It is clear from the census data that the Poles were one of the last immigrant groups to arrive: only five of the Poles who lived in the Boott housing had arrived in Lowell before 1900. The Poles were probably still on the periphery of the community, both in economic terms as well as in terms of being accepted by other groups. They would surely have found comfort in living with their own countrymen (De

Cunzo 1982: 20). While the center units housed four different nationalities in varying combinations, the Poles remained isolated in the outside units.

The nationalities represented in the center units were as follows: 41 French Canadian, 12 Irish, 15 English, and 39 native born. There were also very small numbers of Scots, Armenians, Italians, and French. Fourteen of the 18 people at #44 and #45 Sirk Street were French Canadian, and four were native born (children born in the United States of foreign-born parents were counted by the author as being of their parents' nationality). Number 94 John Street was more evenly divided, with 19 French Canadians and 11 native-born boarders, but it housed no Irish. This boardinghouse was the most crowded, with 33 boarders. There was a fairly even mix of Irish/English and native-born residents at #46 Sirk Street, but it housed no French Canadians. This unit had the smallest number of people, 15 in all. Number 92 John Street housed 17 Irish/English, nine native-born residents, and only two French Canadians. Number 98 John Street was the most evenly divided, with five French Canadians, seven native-born, and six Irish/English boarders. It seems clear from these data that the Irish/English and the French Canadians seldom resided together in large numbers.

It is highly likely that at least some of the structures that had traditionally served as boardinghouse units were, by 1910, converted to lodging houses and tenements. Only #44 and #45 Sirk Street and #94 John Street were labeled explicitly as boardinghouses; although it appears that the conversion of a portion of the units to tenements had begun as early as 1889 (see page 50), this change was undoubtedly influenced in part by their sale to Saiman Sirk, who, as discussed in Chapter 4, converted at least one row of Boott boardinghouses, those on Bridge Street, into apartments.

The divestitute by the mills of their employee housing had occurred extensively in Lowell by 1910. George F. Kenngott states in *The Record of a City: A Social Survey of Lowell, Massachusetts* (1912: 45) that no longer did the Boott, Massachusetts, or Shirley Mills provide any corporation housing and that the rest of the Lowell mills still owned only a few of their tenements. He adds that after the sale of the mill housing to real estate agents (like Saiman Sirk), the rents doubled and trebled, the housing conditions deteriorated, and the number of residents, predominantly immigrant workers and their families, greatly increased.

While the number of Polish people in the end units does suggest overcrowding, it is curious that, according to the 1910 census, the average number of residents in the units that had traditionally served as boardinghouses actually declined a bit from what it had been before the housing was sold: in 1880 there was an average of 21.7 residents in the seven boardinghouses listed; in 1900, immediately following the sale of the housing, the average per seven units was up only slightly to 22.4; by 1910 the average for the six units included in the census was 19. If this figure is accurate, it perhaps reflects the conversion of some of the boardinghouses into other forms of housing as well as a desire on the part of the immigrant families to live, when possible, not in mill housing but in their own established ethnic neighborhoods.

Each address did, however, as Kenngott suggests, did house a fair number of families, and in fact, the units were all at least one-half male. Number 46 Sirk Street, for example, had three single men, no single women, and three couples or families; #92 John Street was the most evenly divided with seven single males, four single females, and three couples or families.

Out of the 166 total residents of all of the units, only 12 were not Boott mill employees; none of these 12 was Polish. Although the Boott Corporation may no longer have owned the units, it is clear that the residents were still dependent on the mills for their employment.

Glimpses of an Early Twentieth-Century Boardinghouse

Blanche Pelletier Graham lived in a boardinghouse on John Street from ca. 1907 to 1912. Her name is listed, along with her parents and sister, in the 1910 census. The census taker listed the family as living in #99 John Street, but this may not be accurate information. It is unclear at this time whether the Pelletiers lived at #97-99 or #95-97 John Street. Mrs. Graham was interviewed by the author at her home in Lowell in November, 1985.

Mrs. Graham is one of the last of the twentieth-century counterparts of Mary Paul and Delia Page, whose observations of nineteenth-century Lowell were recorded in their letters to friends and family (Dublin 1981). Because she lived in one of the Boott units, Mrs. Graham is able to offer us a glimpse of life inside a boardinghouse that we would not otherwise have. Her memories help remind us that "a building remains reasonably fixed during a long period of time and steadily permeates the mind" (Martin 1981: 16).

Luke and Anna Pelletier, Mrs. Graham's parents, were both French Canadian mill workers. Mrs. Graham does not know what year her parents moved to Lowell, but her father was a "first class" weaver, and her mother was a "first class" spinner. Mrs. Graham was born in 1906 in a Merrimack Street boardinghouse. While still a baby, she moved with her parents and sister to John Street. Her parents worked in Mill #2 of the Boott Corporation.

Because Mrs. Graham was a child when she lived on John Street, she has different memories of the boardinghouse than would an adult mill worker. She undoubtedly recalls certain details that a mill hand, who worked long hours and who came back to the boardinghouse only to eat and sleep, might not. For example, young Blanche helped the keeper, Mrs. Croteau, set and clear the table at meal time. A child or servant might be more apt to do this than an adult. Mrs. Graham remembered that the china she helped to carry to the table was undecorated whiteware. There was a full set of it, including pitchers, sugar bowls, and butter dishes. "Solid stuff," as Mrs. Graham called it. Whenever she broke a piece, Mrs. Croteau would say to her, "well, forget it." Not surprisingly, Mrs. Croteau, like the boardinghouse keeper Mrs. Weston of the 1840s, purchased her chinaware in bulk.

Mrs. Graham's memory of the food served for breakfast, dinner, and supper was that what was served was quite plentiful. In her own words,

> In the mornin' you had bacon and eggs and all that stuff. It was good food, oh yeah. If you felt like toast, French toast, or oatmeal, then she had it. At dinnertime she'd have maybe a big corn beef and cabbage dinner. . .At supper, well ya had a light supper. She'd warm it up and give it to you.

There were 26 people listed in the 1910 census as living at 99 John Street, but Mrs. Graham does not recall the unit in which she lived as having been crowded. More than that number, however, took their meals there and lived somewhere else. Mrs. Croteau "couldn't accommodate everybody who ate there." She also recalls taking lunch pails into the mill yard to give to certain of the workers when asked to by Mrs. Croteau. This supports Mrs. Graham's memory that much of French Street consisted of rooming houses and that John Street was all boardinghouses. The *Lowell Directory* cross reference also makes a distinction between lodging houses and boardinghouses. She further remembers that there were apartments in some of the blocks, which substantiates the conclusions suggested by the census data. Mrs. Graham's friends, the Brennans, lived in a two- or three-room apartment, probably at #99 John Street. The Pelletiers and Brennans did not live in the same unit, supporting the suggestion that the Pelletiers were at #95-97 John Street. Another friend, Martha Doherty, also lived in an apartment on Sirk Street.

When Mrs. Graham was shown the 1907 Sanborn Insurance map, she immediately pointed to #99 John as being Mrs. Croteau's unit. When shown the 1836 Proprietors of Locks and Canals elevation of the Boott boardinghouses (Figure 4-3), however, she indicated that two middle units were those run by Mrs. Croteau. She said that the two front doors were right next to one another, but that the right-hand door was the only one that was used; the left hand door was barred. The doors were apparently as close to one another as the end unit doors shown in the same elevation. She recalls that they were not as far apart as the two middle doors shown in the same plan on the long side of the block. The fact that there were two doors indicates that two of the units had been combined into one, a structural alteration that, according to the census data, had become relatively common.

Upon entering the right-hand door, Mrs. Graham recalls that one walked down a hallway that led into a reception room. It had some wooden chairs and a couple of tables where men sat, talked, and played cards. Also on the ground floor right, both behind and to the right of the reception room, were Mrs. Croteau's family's three rooms. A door from the reception room led into the dining room; this ran the full length of the left-hand side of the house and had three long wooden tables in it. Behind the reception and dining rooms was the kitchen. It had a long black stove along one wall and a sink. There were two doors in the kitchen; one led directly into a wooden shed and the other into a small yard. The shed housed the wood and coal used for heating and cooking, and it was also used to store garbage. There were apparently doors at the back of the shed used to place the garbage into the alley for collection. Mrs. Graham recalled no vegetable or flower garden in the yard, nor were any animals kept there. It was used only to hang out the laundry. Mrs. Graham thought that somewhere on the ground floor there was a fireplace; it was, possibly, in the keeper's apartment, but she does not recall it being used. She had no memory of a cellar.

There were stairs on both the left and right sides of the hall, both of which ascended to the second floor. On both the second and third floors there were approximately five rooms of varying sizes. There were also two rooms in the attic. The largest room housed a family, the middle size was for a couple, and the smallest housed single people, of whom most were men. As Mrs. Graham remembered it, there

> wasn't much furniture, cause them days they didn't have much furniture. . .Mattress was like straw or some darn thing. . .or maybe feathers. . .and wooden chairs, everything was wood. . .there was no fanciness. Maybe a plain wooden bureau with a few drawers to put your clothes in and a mirror to stick up on the wall. That was the furniture.

The Pelletiers had a room on the second floor. Mrs. Graham's parents slept in one double bed in the room, and she and her sister slept in the other. The room was heated by a pot-bellied stove, and all of the furniture in their room and on the first floor was, she believes, owned by Mrs. Croteau.

The hallways and rooms were lit by kerosene, and off of the second-floor hallway there was a water closet and a cold water sink. Everyone, including the Croteau's, used this one facility. There were, however, "piss pots" (as Mrs. Graham called them) in every sleeping room. She did not recall a privy, a cistern, or a well anywhere on the property.

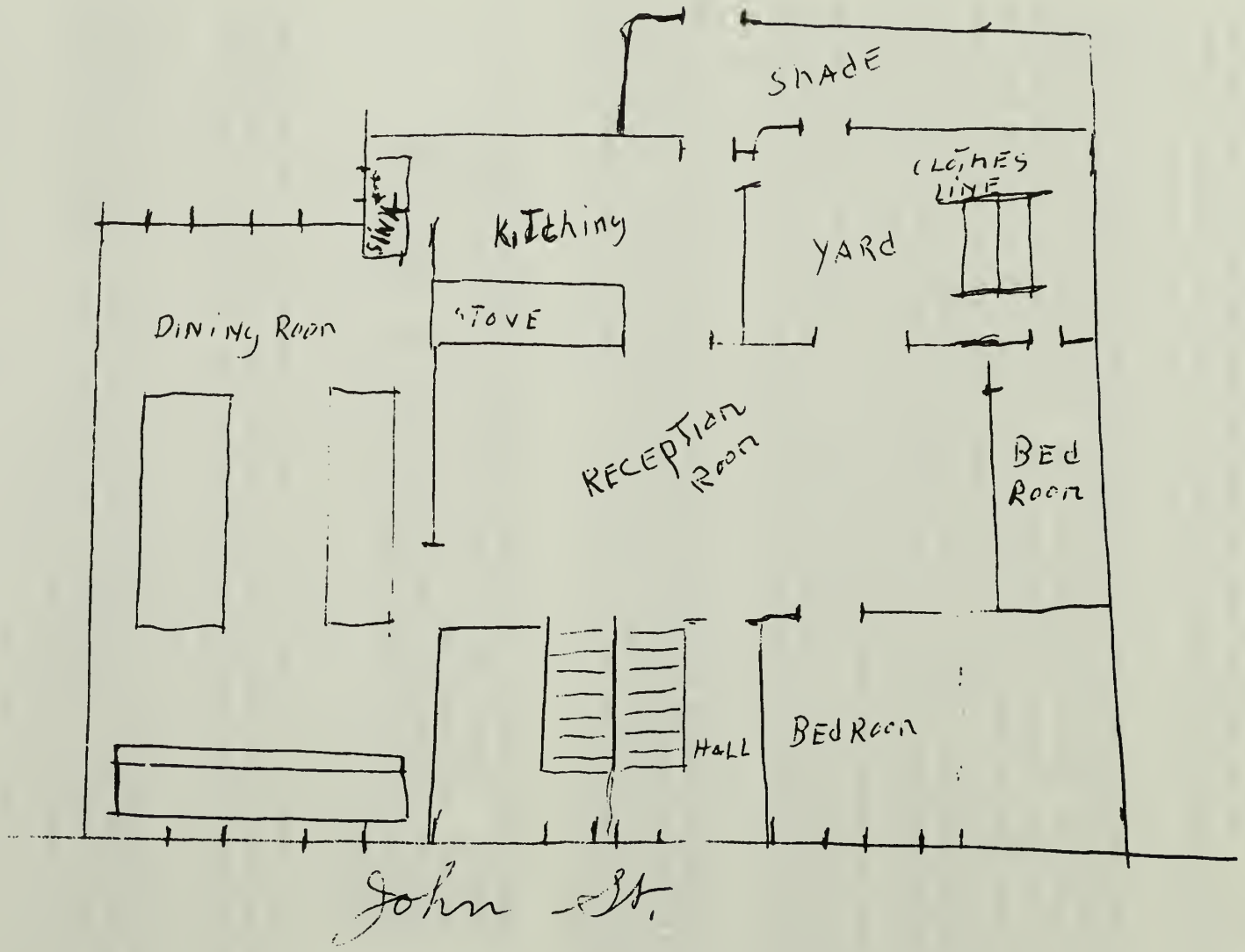


Figure 5-3. Blanche Graham's sketch plan of the John St. boardinghouse in which she lived.

Figure 5-4. The dining room of Croteau's boardinghouse, ca. 1908. Courtesy of the Lowell National Historical Park.

It is interesting that the layout of the boardinghouse in the early 1900s, as described by Mrs. Graham, corresponds fairly closely to what Dublin found to be the typical Hamilton Corporation boardinghouse of the 1830s.

> The first floor contained kitchen and dining rooms and quarters for the boardinghouse keeper and her family. The second, third, and attic stories held bedrooms. Typically, twenty-five women resided in the Hamilton boardinghouses, with four to six in each bedroom. (Dublin 1979: 80)

Thomas Bright, an Englishman, commented in 1852, after visiting several Boott boardinghouses, that on the ground floor of each there was a parlor and above that rooms of different sizes, with two to four double beds each (cited in Center for History Now 1983a: 96-97).

Other than the recollection that two of her friends lived in apartments, Mrs. Graham had few memories of the inside of the other Boott units. When she played with other children who lived in the housing, it was often in the millyard. They would "play house" using the spools and rusty wheels along the canal. She did say, however, that there was a small corner store right at the end of the block, at John and French Street, that sold candy, tobacco, and canned goods. Number 52 French Street is not included in the 1910 census; whether it served as a store for a few years has not been determined.

Mrs. Graham recalled that the boardinghouse was much more of a man's world than it was a woman's world. There were more men than women, and it was they who used the reception room. "The women," as she said, "were more quiet." She remembers her mother coming back from the mill and making shirts for "this man or that man" on a sewing machine. "Whether it's hers or somebody elses, she sewed. So she didn't do much talkin'."

The information on #99 John Street in the 1910 census (which she said was inaccurate) indicates there was a fairly even split of men to women in the unit. But in the other boardinghouse units examined for this research, Mrs. Graham's memory is borne out. What is more, she did not remember there being many other children, which also corroborates the census data. The six children listed at #99 seems quite high; out of the 166 people in all the units examined here, only 26 residents were under age 16. The immigrant groups she recalled were the French, English, and Irish, and she had no memory of any Polish people. This supports the supposition that the Poles were, in some sense, isolated from other groups while still living in the immediate area.

Census data are often considered rather dry and faceless. While it is unfortunate that Mrs. Graham was too young to remember the names of most of the other residents of the John Street boardinghouse when she lived there, the census was for her a great deal more than statistics. When given a copy of the census, she said, "That's quite a thing. You live most of your life in Lowell . . . and you wonder if they know it. They sure do. They have it down in history." She could remember a great deal of detailed information even without being able to recall the names on the census. It is intriguing to speculate the richness of memory that might be evoked from other interviewees when similar data are shared with them.

Subsequent to the November interview, Mrs. Graham drew a diagram of the first floor of the boardinghouse (Figure 5-3). The drawing confirms the picture that she conveyed of the unit in the oral history. Although the reception room appears in her diagram to have been as large as the dining room, Mrs. Graham indicated that the reception room was, in fact, quite a bit smaller than it appears on her drawing. She also realized that she should have drawn the larger of the two bedrooms in Mrs. Croteau's apartment as two rooms--a bedroom and a parlor. The "shade" indicated on the diagram is the shed. One of the bedrooms and the reception room have what look like doors that lead into the yard. It is not clear whether Mrs. Graham intended these breaks in the wall to represent doors or windows.

It is intriguing to speculate as to why Mrs. Graham drew the reception room the size that she did. It may simply have been, as she indicated, a matter of mistaken scale. But as she further recalled, the reception room was used much more by the men than by the women in the unit; the men sat in there and played cards. Even though it was a communal space, the reception room was probably not an area where Mrs. Graham would have spent much time, and from a child's perspective it may have been a somewhat intimidating room. The reception room could have taken on a special significance for her which is reflected by its prominence in her diagram.

There is some newly discovered documentary evidence that not only corroborates many of Mrs. Graham's recollections of the boardinghouse, but it also adds an extraordinary amount of rich detail and texture to the little that is known about life in a Lowell boardinghouse in the early twentieth century. The document is a photograph, taken in 1907 or 1908, of the dining room of Mrs. Croteau's boardinghouse (Figure 5-4). It was given to the National Park Service by Mr. Rudy Slosek of Hollis, New Hampshire. His relationship to the Croteaus is not yet known. The fact that it is the only known photograph of the interior of a Boott boardinghouse makes it of enormous importance for both the archeological exploration and historical analysis of the Boott units. That it may also be the unit in which Mrs. Graham lived makes the photograph all the more valuable.

When Mrs. Graham was shown the photograph, she paused for a minute and then said, "that's the dinin' room." In the 1910 census, however, Olivine and Barthelemi Croteau were listed as keepers for a boardinghouse at #44 Sirk Street. (Their names were transcribed by this author as Crotean in Appendix B.) According to the *Lowell Directory*, in 1914 they ran #92 John Street and in 1918, #95 John Street (Personal Communication, Michael Wurm, March, 1986). It was difficult to read the #99 John Street keeper's name on the 1910 listing, but the name does not seem to be Croteau. Mrs. Graham was quite certain, however, that Mrs. Croteau ran the unit where the Pelletiers lived. In other words, more research needs to be done to determine which boardinghouse dining room it is that appears in the photograph.

The only person in the photograph who can be identified with certainty is the little boy, Joseph Beaulieu. The Beaulieus and Croteaus were undoubtedly related, as they were listed in the *Lowell Directory* at the same addresses for a number of years (Personal Communication, Michael Wurm). Joseph's mother, Louise Marie Desmarais Beaulieu, is probably the woman standing next to him. It is very possibly Mrs. Croteau who is next to her. It would be logical for the boardinghouse keeper to have the "place of honor" in the center of the photograph. Mrs. Graham felt, however, that these were two women who waited on tables and that the man in the rear with the apron was the cook who helped Mrs. Croteau in the kitchen. Whatever the relationship of these people to one another, it is clear that Mrs. Croteau required a good deal of help in running the establishment and feeding the boarders.

If, as Thomas J. Schlereth (1980: 42) contends, photographs "represent shared notions of appropriate moments to photograph," one wonders what event prompted this photograph. The data in the *Lowell Directory* suggest that Mr. Croteau, if not the entire family, had only recently returned to Lowell. He was listed as living at #44 Sirk Street in 1903 and then "removed to Fitchburg" in 1904 and back on Sirk Street by 1909. Perhaps the Croteaus wished to capture on film the reopening of their establishment. Whatever the reason for the photograph, one can almost visualize the boarders trooping into the large room, hanging their coats and hats on the rows of hooks on two of the walls, and sitting down to the meal.

There are six tables visible in the photograph, and they appear to seat eight persons each, so the Croteaus were feeding upwards of 50 people per meal. This figure supports Mrs. Graham's recollection that many more people boarded than lodged in her unit, as none of the boardinghouses researched in the 1910 census listed anywhere near 50 lodgers. She recalled that there was assigned seating in the dining room and that each person would always sit at the same place for each meal. "Serving women" would carry platters of food to each table, serve the boarders, and

then leave the platters on the tables "homestyle." It is difficult to see clearly the tableware in use, but it looks as if the man in the foreground is eating his meal off of undecorated whiteware, and there are similar plates placed upside down at each table setting. It appears that the drinking glasses with the folded napkins in them were then placed on top of the plates. There is also more of the "solid stuff" Mrs. Graham remembered so distinctly, both stored in the hutch and on the sideboard in the rear. Also visible on the sideboard are two stoneware ale bottles, possibly Dutch in origin (Switzer 1974: 15). Next to the sideboard are drinking glasses on a shelf with water pitchers below and a large coffee urn.

When Mrs. Graham was asked what she thought the sloping neck glass bottle in the center foreground of the photograph had contained, she said that in the middle of each table there was a small, round tray that held salt and pepper shakers and cruets for oil and vinegar; this container is probably one of the cruets to which she referred. There are other similar containers, at least one of which is filled and has a stopper, on the other tables.

The large Regulator clock on the back wall seems at first glance to add a certain homeyness to the room; perhaps, too, it is a visually powerful symbol of the Corporation's presence. The clock's prominence in the center of the wall would have been a not-so-subtle reminder to the mill workers that they had to abide by the Boott Mills schedule. As Mrs. Graham recalls, "Cause you couldn't be late on the job. Cause once you went in the mills, those gates were locked."

It seems highly likely that the support posts and beam in evidence in the photograph are clues to the fact that the dining room was created out of two separate rooms by removing the wall between them. The enlargement of the room is in keeping with Mrs. Graham's recollection that the dining room had taken up one whole side of the boardinghouse. Also in evidence are the rows of tables and the gas or kerosene lighting that she remembered.

The vantage point of the photograph makes it difficult to orient oneself in the room and to know where the front and rear of the unit would have been. There is no door visible, but when Mrs. Graham looked at the image, she pointed to the area behind the man in the apron as where she remembered the kitchen door. Besides the window visible in the wall to the right, there is a window reflected in the mirror on the sideboard (there is also a wall mirror reflected in the sideboard mirror). The two windows may have been along the same wall, or the reflected window may have been in the wall behind the photographer. If the latter were the case, it would be much more likely that the dining room was part of an end unit, where there would have been windows in walls at right angles to one another. This window placement would not have been possible in any of the middle units.

Because the Croteaus ran a boardinghouse, it would have been economically prudent for them to purchase goods wholesale. So it is not surprising that, besides the undecorated whiteware, there are a number of other items in the photograph that are of a kind. Many of the chairs are identical in design, as are the linen tablecloths and linen napkins. The drinking glasses that are visible to the left of the sideboard also appear to be identical. It is highly probable that other furnishings and tableware throughout the boardinghouse were also purchased in bulk.

Even though the people were posed for the photograph and the room was probably tidied up for this event, the overall impression from the image is that there was a certain propriety upheld by the Croteaus in their running of the boardinghouse. For example, one wonders whether the men, if they were household or kitchen staff, did not always wear suits and ties to their jobs. The Croteaus ran the unit to turn a profit, and the furnishings and tableware were, not surprisingly, quite utilitarian in quality; many were bought in bulk. (Without the aid of further documentation, it is, of course, impossible to determine how successful they were in their endeavor compared to other boardinghouse keepers.) Care was taken, however, to add certain amenities to the room; the tables were neatly set, with carefully folded napkins placed in the glasses, and a mirror, a paper fan, and popular prints were hung on the walls. These details suggest that the Croteaus took a certain pride in their boardinghouse.

1850-1880

The number of female residents did greatly outnumber the male residents up through the 1880 census. Of the units studied, however, each census, except the one taken in 1850, listed at least one boardinghouse comprised chiefly of male boarders. In 1840, as has already been indicated, #46 had at least eight male boarders. The data in the *Lowell Directory* showed that this unit housed only men up until 1849. It reached a high of 12 male boarders in 1842. In 1850, the unit had only the three Warren and four Jameson family members living in it. Until 1900, this was the boardinghouse with smallest number of people, and it appears to have become a family tenement. The conversion of boardinghouse units to tenements was not uncommon. William Southworth, agent for the Massachusetts Mills in the late nineteenth and early twentieth century, stated in a lengthy document that described the decline of corporate paternalism:

> Now, as to tenements for private families; Many of these were originally provided, and, in time, as it became more difficult to fill boardinghouses . . . more or less of the houses intended for boarders were converted into tenements for single families. It was thought desirable at the outset to keep near the mills the more important men employed by them, such as overseers, secondhands, and experienced mechanics, and these generally had the first choice of tenements. . . . (cited in Center for History Now 1983: 126)

All of the other boardinghouses were filled almost entirely with women. Number 37 was not included in the census, but #36 had 54 boarders. As this was considerably higher than the next largest number of boarders (39 in #35), keepers Mary and Sam Baker probably also had charge of #37. Sarah Quimby boarded 46 people in units #27 and #38. It is conceivable that the keepers were beginning to find the running of only one unit unprofitable. As agent Southworth put it,

> The gradual advance in the cost of living and the demands for a better table resulted in the claim of the boardinghouse keeper that a single boardinghouse yielded no profit and sometimes barely a living, and the corporation was called upon to put two or three houses under the charge of a single person. This resulted in a relaxation of the rules. (quoted in Center for History Now 1983: 126)

The tenement units in 1850 and up through 1900 housed families. Many of these units often had a few unrelated residents. In 1880, unit #40 housed 13 people; until 1910, this was the tenement with the greatest number of persons.

In the 1860 census a change occurred in the boardinghouses. Number 38 and #44 had both couples and single men, as well as single women, as boarders. Susan (Sarah?) Quimby was now keeper of boardinghouse #38 and tenement #40; she housed 21 single men, two servants (probably sisters), five couples, and one child. It is unclear whether any of her boarders lived in the tenement, as there is no indication of who lived in which unit. In #44, Amelia and Ezra Austin boarded nine single men, three single women (one of whom had two children), four couples, and one other child. Almost all of the couples and families in these units were New England born.

The composition of the units reflects the growth of the family labor system in the mills. According to data in Dublin's *Women at Work* (1979: 141), the male work force at the Hamilton Mills increased greatly between the 1830s and 1860. In 1836, men comprised only 14% of the entire force; that number rose to almost 30% in 1860. It is interesting, however, that 17 of the single and married men in these two units worked as painters, barbers, masons, clerks, and carpenters. While it is conceivable that a number of these men provided ancillary services for the Boott, at least some of them were probably employed elsewhere in Lowell. Nor did their wives work for the Boott. In the words of Agent Southworth:

> With the increased difficulty of finding lodgers, the rules became relaxed, and there was a strong temptation to 'keep full' by taking in persons not employed by the corporation, or taking a few men boarders if they were offered. Both these courses were objectionable.

The boarding of both males and of non-Boott employees to 'keep full' is apparent in these two units.

In 1850, 29.4% of the Hamilton Mills work force was Irish (Dublin 1979: 139). By 1860, the figures had jumped to 46.9%. Only 29.6% of the female immigrant workers and 33% of the entire workforce, however, lived in the company's housing. In 1836, 73.7% of the employees had lived in company housing. The Boott units figures reflect Thomas Dublin's findings. Both censuses indicated that there were few Irish residents. Of the units in 1850, there were 23 Irish out of 262 total residents; in 1860, there were only 14 Irish. Dublin asserts that the small percentage of Irish in the company housing may reflect discrimination against or segregation of the Irish workers by mill management. In fact, once the Irish had started to enter the workforce in large numbers, the requirement that mill employees live "on corporation" had been rescinded (Center for History Now 1983: 23).

The 1860 and 1870 censuses listed the Personal Estate Worth and the Real Estate Worth of some of the residents. In 1860, there were 13 figures for Personal Estate (P.E.). The John B. Warren household at #46 was the wealthiest, with a P.E. of $2500. Horace B. French, who lived in tenement #47, had the second highest P.E. of $1000. The enumerator may have had a 'catch-all' amount for the boardinghouse keepers; many of their worths were listed at $400. Dominicious Stackpole, mill hand, had the lowest P.E. of $75. Jeremiah Tasker, watchman, had a low P.E., but he had real estate valued at $2000. The wealthiest, Mr. Warren and Mr. French, were, not surprisingly, both overseers.

The 1870 census data, like that for 1860, indicated that both #38 and #44 had predominantly male residents. The major change is that 1870 was the first year that a unit housed largely foreign-born workers. Whether this was a case of conscious or subconscious segregation by the corporation, a reflection of "strength in numbers," or a combination of the two, #36 housed 15 of the 25 Irish. This unit also had three English, three native-born, and one Canadian worker. There were also relatively large numbers of foreign-born residents in both #38 and #44. Units #37 and #45 were composed entirely of native-born workers. The mean number of people per seven units decreased to 18.3; in 1840 this figure was 28.7.

The highest of the seven P.E. listings in 1870 was for Leonard Morrill, who lived in tenement #39 and "worked cotton mill"; his estimated worth was $5000. Susan Calef, keeper of #36, had a P. E. of $3000 and an R. E. of $1500. Mrs. Horance L. Hoyt, also a boardinghouse keeper, had the lowest P. E. of $1000.

The number of Canadians tripled from six in 1870 to 19 in 1880, and the Irish in these units in 1880 increased to 35. Even though the family labor system was on the rise, and the foreign-born workers were moving into the units, the numbers of couples and children in the boardinghouses remained quite small. Although quite a few of the boarders shared common surnames, suggesting some sort of familial tie, if the keepers' families and the residents of the tenement units (including #46) are excluded, it appears from both the 1870 and 1880 census data that most of the boardinghouse residents were still single adults.

The data permit the tentative interpretation that there was a deliberate patterning in the placement of the boardinghouses for male workers from 1840 to 1880. In 1840, of the units studied here, the only boardinghouse that took in men that was included in the census was #46. The data for all of the Boott units that were in the census (there were some units omitted), compiled by Martha Mayo of the University of Lowell Special Collections, indicate that there were three other units with male boarders: #6 housed 18 men, #30 had four men, and #54 also had four men.

All of these four units were boardinghouses closest in proximity to the end tenements in the row (see Figure 4-8); furthermore, there was only one unit with men for every two blocks. This suggests that not only did the corporation want men to reside only in certain units, but that it also specified certain units in a set location within each block for this purpose.

While this same pattern did not appear in 1850, from 1851 to 1880, #38 and #44 were the only two boardinghouses in units #33-48 in which there were significant numbers of men. This consistency suggests, therefore, that certain units were designated, formally or informally, as those to house males and remained as such for some years.

1890 to 1900

Although the 1890 Federal Census for Massachusetts is not extant, some interesting information was gleaned from a Boott Mills correspondence book in the University of Lowell Special Collections. The letters date from October 1888 to July 1891, and they were written by J. G. Marshall, Paymaster of the Boott Corporation. Although the letters are signed by Marshall, he makes it clear that the letters were written per order of the Agent, Alexander G. Cumnock. The majority of the letters concern the purchase and transport of cotton, but at least of few of them were written to boardinghouse keepers. There are over 900 pages of correspondence, and a thorough reading of them would undoubtedly bring much more useful information to light.

Because of the increasing trend towards the family labor system, the corporations placed less and less financial emphasis on housing (Dublin 1979; Center for History Now 1983). By 1882, one of the Boott blocks had been demolished. It is clear from the following letter that the units were not filled to capacity and that the company wished to further reduce the number of boardinghouses.

Feb. 11 '89

Mrs. R. M. Davis
Tenement no. 30

Dear Madam,

As our boarding houses are not all full, we propose to reduce the number and increase our private tenements and shall April 1st next close no. 21 at present occupied by Mrs. Bixby and have given her your tenement and you will please vacate to us your said tenement by the above date (April 1st, '89).

Yours truly,
Cumnock, agt.
Marshall

One wonders why it was Mrs. Davis who was ordered to vacate the premises. It is conceivable that there was some form of seniority system in effect, similar to that referred to by Agent Southworth in his report cited above. It is apparent, however, that unless the following was used as an additional excuse to evict Mrs. Davis, that #30 was not in the best of shape.

Mar. 8 '89

Mrs. Davis
no. 20

My dear Madame,

Have referred matter of your boarders to Mr. Cumnock and he says he shall do some repairs in your house before Mrs. Bixby takes it so it will be necessary for your boarders to vacate and get board at (illegible) when you go out.

Yours truly,
J. G. Marshall

Even though the corporation no longer needed to maintain the strict rules necessary to the strong paternalistic policy of 50 years before, it seems that the Boott still wanted certain standards upheld. In the following letter, the Mr. Bond referred to was probably a Mr. Edward E. Bond, listed in the *Lowell Directory* as a Boott overseer. Ann Hutching must have been the wife of Enoch Hutching. They were listed as the heads of units #44 and #45.

June 21, 1891

Mr. Bond,

Frank Mcdermott was dismissed from Ann Hutching's house Saturday for drunken and disorderly conduct. You will please not again employ him. He has sold his pay to Mr. Daggett.

J. G. Marshall,
for agt.

The following letter was in the same vein:

Mar. 15 '89

Mrs. John Clark
Tenement no. 22 Boott Corp.

My Dear Madam,

Various complaints have come to Mr. Cumnock of bad behavior of your boy, and he now feels (illegible) to ask you to see to it that your boy behaves himself in this question with more propensity, and in such a manner that no further complaints shall be made of his actions.

By order of agent,
J. G. Marshall

Three of the letters to keepers involved their breaking Boott policy by boarding non-Boott employees. The correspondence cited below states the policy in no uncertain terms. It is so emphatic in tone that one feels that this may not have been the first time that Mrs. Kittredge was reprimanded for violating the rules.

Aug. 12, '89

Mrs. S. Lizzie Kittredge
Tenement no. 27

It has been reported that Sarah Stuart is boarding and rooming at your house and is employed by Prescott Corporation. And your house girl acknowledges (illegible) this fact, and that Sarah has been (illegible) you for the past 6 mos. Her name does not appear on your allowance book, which is against the rules--*Every person remaining in your house must have their name entered in your book and no person not in our employ is allowed to room at your house unless special permission is given by agent.* Mr. Cumnock directs me to say that any further violation of these rules will cause you to forfeit your tenement--any person not in our employ, and who may leave us to work elsewhere, must leave our boardinghouses within a reasonable time after she ceases to be employed by us, *as our tenements are for our own employees* and the boardinghouse keeper will be held responsible for any violation of this order.

Yours truly,
J. G. Marshall, order agent

This letter further substantiates Agent Southworth's claim that the keepers were finding it necessary to board non-company employees so as to be able to earn a living.

In the 20 years between the 1880 and 1900 censuses, the number of Canadians doubled from 19 to 37. There was also an increase in the number of Irish, to 47; 1900 was the first year that the Irish approximately equalled native-born boarders in number. By 1910, as previously indicated, the number of Irish in the units had decreased, and the number of French Canadians was on a par with that of native-born residents. The total of English-born people also jumped from nine to 29.

Thirty of the Canadians were concentrated in two boardinghouses; #43 had no Irish, and #38 had only two Irish. Twenty-two of the Irish were in #37, and eight were housed in #44; neither of these units had any Canadians. The 1900 census, like the 1870 and 1880 before it, reflected the pattern of ethnic divisions in the units.

Between 1880 and 1900, there was another significant demographic change. In 1900 (as in 1910), men comprised at least 50% of each boardinghouse. There was also a substantial increase in the number of couples and families in the boardinghouses. There is, in fact, an indication that the conversion of a portion of the housing to both the tenements to which Paymaster Marshall refers as well as to lodging houses had indeed occurred. The census taker, for the first time, made a distinction in the census sheets between "boarding house keeper" and "house keeper." Unit #46, however, which years earlier appeared to have been converted into a family tenement, once again had more single residents than families.

The 1900 census data indicated that #36 was the unit with the largest number of people; it was listed with 36 boarders. Once again, however, #36 and #37 may have had the same keeper, as #37 was not included in the census.

The data for the tenement units were as incomplete as in 1910. There were no Amory Street listings at all, but all the French Street units were included. The most striking difference between the two censuses was that, in 1900, there were no Polish residents in the tenements. The number of residents per unit was also much smaller: Thomas and Nellie Kelleher lived at #70 French Street, as did three single men; #68 French Street housed Mary and Sarah Dodge, presumably elderly sisters; the eight members of the North family and Robert and Maggie Kirkpatrick lived in

#52 and #50 French Street, respectively. Mrs. Kirkpatrick was a boardinghouse keeper, but there were no boarders at that address. The Kirkpatricks may have actually been heads of #46. They were listed right above that boardinghouse in the census, and the two units were right next to each other in the block (see Figure 4-6). The average number of people per tenement was 4.3. This was considerably below the 1910 census average of 12.8 per each of the four tenements.

1917 to 1942

Beginning in 1917, the *Lowell Directory* was cross referenced by street. In that year, #92 and #94 John Street were listed as boardinghouses. Number 98 John and #46 Sirk Streets were lodging houses, and the latter address was subdivided into two units. Two of the Amory Street units and the four units on French Street remained as tenements. One-half of one block of housing, #41 and #42 Amory Street and #43-45 Sirk Street, was not listed in the cross reference.

Until 1928, #39 and #40 Amory Street were occupied fairly consistently, but they became vacant in that year. By 1943, they ceased to be listed.

In 1918, #50 and #52 French Street became storage facilities, and in 1938, they disappeared from the census. By 1927, #68 French Street had become vacant. Number 70 French Street was occupied until 1940, at which time #68 and #70 were no longer included in the *Directory*. Number 46 Sirk Street by 1918 was also used for storage. In 1921, it was dropped from the cross reference.

Numbers 92, 94, and 98 John Street were used primarily as boarding or lodging houses. There were, however, some years of vacancy for each unit. In 1930, #94 became permanently vacant, as did #92 nine years later. By 1921, #98 had been subdivided into apartments, and it was occupied for 12 years after that. One of these units may have also been enlarged to include #96 John Street, as only after 1932 did this unit appear in the cross reference; it was listed at that time as vacant. Although in 1943 these four John Street units were listed as vacant buildings in the cross reference, the City of Lowell Building Department's records indicate that they were demolished on February 25, 1942.

Conclusion

When Boott units #33-48 were first built they did, without question, house New England mill girls. It has often been assumed, however, that these young women were the sole residents of the boardinghouses during the early years of Lowell's growth. There clearly were some male boarders, and these men may have been housed chiefly in specially designated units. By 1900, male residents outnumbered female residents.

While couples and families had from the start lived in the tenement units at the ends of the blocks, their numbers had, by the turn of this century, increased substantially in the boardinghouses. For many years prior to 1900, despite the rise of the family labor system and the increasing number of immigrant workers, the number of couples in the units had remained relatively small.

It is clear from the information in both the Boott correspondence and the census that, by 1900, some of the boardinghouses had been converted into tenements and lodging houses. Although the Boott initiated this change when it could no longer fill the boardinghouses to capacity, Saiman Sirk likely continued the conversion.

By 1910, French Canadian, Irish, English, Scottish, Armenian, French, and Italian workers were housed in the boardinghouses. The major ethnic groups, however, maintained a division in the housing, a tendency that first became evident with the 1870 census. The newly arrived Polish immigrants, who lived only in the tenement units of each block, were the most fully segregated.

Starting in 1917, the *Lowell Directory* cross reference indicates that these 16 units underwent a type of change that they had not seen before. Instead of being used to house people, over the next 25 years, more and more of the units became storage facilities, fell vacant, or were torn down.

Both Mrs. Blanche Graham's memories of the John Street boardinghouse and the photograph of the Croteau's dining room provide a detailed and quite vivid image of the units in the early twentieth century. Without these two sources, the picture that we have of life in the boardinghouses would be far less complete. Furthermore, the 1910 census had a great deal of meaning for Mrs. Graham. She saw what was written on the census sheets as part of history; a portion of her life was recorded on those pages, as well as the lives of other boardinghouse residents, some of whom were known to her. This fact serves as an important reminder that the Boott corporate housing continued to be home for hundreds, perhaps thousands, of mill workers and their families long after the Yankee mill girls ceased to be a factor in the labor force. If we are fully to understand the growth and decline of the textile industry in Lowell, we must study the experiences of these later operatives with as much interest and respect as we give to their predecessors.

Chapter 6

A PRELIMINARY REPORT ON HEALTH, HYGIENE, AND SANITATION AT THE BOOTT MILLS BOARDINGHOUSES: AN HISTORICAL AND ARCHEOLOGICAL PERSPECTIVE

by Edward L. Bell

Introduction

Historical archeologists working in urban environments of the New World have turned increasingly to models developed by geographers, sociologists, anthropologists, and historians to describe the complex relationships perceived in data drawn from historical and archeological sources (e.g., Dickens 1982; Schuyler 1982). One point of entry to the study of the process of urbanization is through the development of urban services.

Of the services available in the urban context, water supply and waste disposal are particularly amenable to archeological observation. In excavating urban lots, one is often confronted by complex series of drains, privies, and sewer and water pipes that criss-cross the site, revealing a succession of "answers" to problems that modern urban dwellers continue to face: problems of water supply, sewage disposal, and drainage. Honerkamp and Council (1984: 23) suggest that a rich body of information is available from the study of archeological features associated with water supply and waste disposal. These features can provide data on ". . .the relationships of corporate public versus individual private adaptations which have evolved to meet basic needs in core urban areas."

Changing conceptions of health and sanitation are clearly related to changing forms of water and waste facilities. The history of urban health in the 19th century is the history of sanitary reform. Modifications to water and sewer facilities are both generally and specifically related to changes in the conception of sanitation; this process can be studied through documentary and material evidence (e.g., Stone 1979). The sequence that the introduction of services follows throughout a city is often linked to the social and political status of the neighborhoods to which these services are provided. "The sequencing of service to neighborhoods can be used to rank them in terms of their level of integration into the sociopolitical structure of the city. . ." (Honerkamp and Council 1984: 27). Shifts in waste-disposal practices also affect the extent to which artifacts recovered archeologically represent the lifestyles of the people who discarded those objects (Honerkamp and Council 1984; Roberts and Barret 1984).

The exploration of different means of characterizing industrial communities is an ongoing research problem in history, historical archeology, cultural geography, and related fields (cf. Bell 1984, 1985). The study of the history of waste and water management facilities at the Boott Mills boardinghouses in terms of the socio-political environment, of changing concepts of health and sanitation, and of how these changes affect archeological interpretation takes on added interest in that the boardinghouses operated within a system of corporate paternalism. Although Lowell was a planned industrial city, the urban environment was modified over time; tracing these subsequent modifications provides an index to the corporations' preoccupation with controlling the lives of mill workers as well as to how corporate policy shifted in response to economic, technological, and ideological changes.

This preliminary study of the water and sewer facilities at the Boott Mills boardinghouses begins with the historical placement of the boardinghouses within the system of corporate paternalism. It examines the concern for health and sanitation as a function of corporate motives and shows how these reflect changing conceptions of disease etiology. The narrative then moves

to two areas of concern at the boardinghouses by tracing, insofar as the historical record permits at this point in the research, the development of water and sewerage facilities. The implications for archeological interpretation are implicit in the documentary evidence presented here (e.g., the introduction of municipal trash collection severely limits the extent to which artifacts that can be used to infer the lifestyle of the occupants of a site will be recovered archeologically). Finally, this study briefly considers health problems within the larger industrial environment of working in the mills, coming back full circle to the breakdown of corporate paternalism and the rise of the urban housing reform movement that literally brought the boardinghouses down.

This report is preliminary in that it is a working paper, representing the direction and content of research conducted from September to December, 1985. More research is needed to fully develop the themes presented here, as well as to flesh out the bare bones of the historical chronology presented in the text.

Corporate Paternalism and the Boardinghouse System

Concern for sanitation in the environment of Lowell can be traced to its inception as a planned industrial city (Candee 1985: 41; Langenbach 1981). Some historians assert that the forethought evidenced at Lowell was in direct response to sanitary and social problems experienced in earlier European industrial centers. Behind this stated rationale, however, lay a very real profit motive. If the industrial capitalists were to secure a tractable working population, they must first assure the mothers and fathers of the New England countryside that their daughters would not be entering a morally dangerous realm, but that their daughters' physical and spiritual needs would be met in Lowell (Center for History Now 1983: 91-92; Dublin 1979: 22-57).

Through the policy of corporate paternalism, the social lives of workers were regulated and their physical environment controlled. Employees of the corporations were supposed to have been provided with clean quarters and regular meals. Vaccinations, made mandatory by the Lowell Board of Health, were given free by the companies (Bartlett 1841: 15; Lawrence n.d.; Wortzel 1980: 227). The Lowell Board of Health ([hereafter LBH] 1871-1888: 90), however, was compelled in 1879 to adopt a regulation *ordering* vaccinations for mill employees. In 1888, suspecting that the corporations were not following this regulation, the Board (1871-1888: 190-192) sent letters to all of the manufacturers, reminding them of the regulation. A dispensary providing free medication for Boott employees was established in 1836 (Miles 1846: 208), followed in 1839 by the conversion of Kirk Boott's mansion to a hospital (Bartlett 1841: 15; Miles 1846: 207).

Even if Elisha Bartlett (1841: 13) was not entirely correct in his emphatic assertion that "*the manufacturing population of this city is the healthiest portion of the population . . .*," he was essentially accurate in pointing out that the workers were not entirely neglected. By taking a concerted effort to provide for the health of the workers, the corporations were attempting to secure the stability of their working population, as well as aiming for the positive public image needed for continued recruitment of new workers.

The boardinghouse system exemplifies the corporations' concern for health and sanitation in Lowell. The corporations chose boardinghouse keepers who were to be attentive to both the moral and physical needs of the workers under their care. Cleanliness was a matter of intense concern (Miles 1846: 67; Trades and Labor Council 1900: 190). Corporate interest in sanitary conditions appears, for example, when the Lowell Board of Health (1836-1840) voted on 2 July 1836 to serve notices on ". . .the owners and occupants of the premises on which there exists certain nuisances complained of by Kirk Boot[t] and others. . . ." Whether complaints about unsanitary conditions were used by the agent as an excuse to exert control beyond the property owned by the Boott Corporation is unclear, but it is evident that the corporations feared that their own efforts would be undermined if abutting or nearby landowners or tenants violated community standards of

sanitation. The measures taken by the corporations to control the urban environment stem from the prevailing notions of disease etiology in the 19th century.

Disease Etiology

The 19th-century conception of sanitary hygiene was a function of the miasmic theory of disease. "It was taught by medical men and health officials that filth and decay in every form were a serious menace to health, both from the disease germs which they contain, and the poisonous gases which they give off" (Chapin 1902: 235 quoted in Wamsley 1982: 4; Rosenkrantz 1972). It was not until the very end of the 19th century that the present germ theory gained popularity, and, at first, the two were not seen as incompatible (Stone 1979; Wamsley 1982). Ventilation, dryness, and sunlight were the weapons used in the 19th-century battle against disease. This conception was expressed especially well in a passage from the first report of the Massachusetts State Board of Health ([hereafter MSBH] 1870: 56), since it posits a hypothetical future where, in the writer's view, all the necessary conditions for health have been met.

> Now, let us ask ourselves what would be the effect upon the annual mortality in a community like Boston. . .if all the foul fluids could be made to quickly depart, by force of gravity, through ventilated sewers; if all the foul solids could be removed without delay in carts provided with the means of arresting putrefaction; if the blind alleys and narrow streets were opened to the circulation of air, and the admission of sunlight; if the old vaults were removed, the old cisterns torn down or filled up, and the general principle of *cleanliness, in its broadest sense,* applied to air, water, and food?

One of the ways that this disease theory entered into the policies of the Lowell corporations was mentioned above: the expectation that the boardinghouse keepers should maintain a clean area. The Massachusetts Cotton Mills stressed in their boardinghouse regulations of 1876 that "the health of the operatives demands that *particular attention* should be paid to the cleanliness and daily *ventilation* of the rooms" (quoted in Kenngott 1912: 24). Henry A. Miles (1846: 67), writing of the conditions at the boardinghouses in Lowell's early years, states that they ". . .are all furnished with an abundant supply of water, and with suitable yards and out-buildings. These are constantly kept clean, the buildings well painted, and the premises thoroughly whitewashed every spring, at the Corporation's expense." Regulations for the Middlesex Company specifically ordered that "the buildings and yards about. . .[the boardinghouses] must be kept clean and in good order. . ." (Lawrence, n.d.).

The common thematic thread in the writings on sanitary conditions in Lowell is the description of the conditions necessary for a healthy working population, related, of course, to the prevailing conception of disease etiology: absence of filth, and adequate ventilation to ensure the dissipation of dangerous miasmas. Like the quotation above from the Massachusetts State Board of Health (1870: 56), corporate regulations outlined the factors necessary for an ideal situation. Henry A. Miles (1846: 67) directed the reader's attention to the practice of cleanliness, partly as an explanation for his thesis on the good health of the workers, and partly as a dialectic on the proper behavior of the corporations. Within his narrative, for example, Miles presented the symbolic opposition of filthy structures: whitewashed buildings. His reference to this practice, however, may also have appealed to his readers' knowledge that whitewash contains lime, which is a sanitizing agent.

Regulations, then, inform us as to what was desired (in this case, sanitary conditions), but do not necessarily tell us how closely the rules were followed. Descriptions of sanitary conditions in Lowell by Elisha Bartlett (1841) and his literary descendant Henry Miles (1846) are suspect, as these writers were clearly apologists for the corporations, their protests to the contrary notwithstanding. Two sources of information on the actual performance of the corporations are

available, each with its particular set of biases: the minutes of the Lowell Board of Health and the archeological remains at the boardinghouse sites.

The Board minutes (LBH 1836-1840, 1871-1888, 1888-1893) record actions taken against individuals and corporations for health nuisances. Few complaints were made against corporations, suggesting either that sanitary conditions were generally maintained, or that the corporations' control extended to civic bodies. Those few complaints that are listed do, however, provide some degree of assurance that the Board was not altogether reticent in correcting unsatisfactory conditions at corporate facilities. Important information relevant to potential archeological remains in the boardinghouse area can also be found in the minutes and published reports of the Lowell Board of Health.

Municipal refuse collection, as described in the Board minutes, delimits the extent to which artifactual evidence found its way into the archeological context. This will be especially important for the analysis of any artifacts recovered from privies. The Board minutes relate that privies were cleaned out intermittently. Later, the Board (LBH 1871-1888: 116) mandated that privies were to be cleaned to the bottom, and references to the abandonment of the Boott Mills' privies note that they were filled with soil. Understanding how the behavioral context intersected with and circumscribed the material culture of the society will be helpful in framing the archeological analysis. Similarly, the intersection of the documentary and archeological records provides a behavioral context that allows a more complete cultural interpretation (cf. Beaudry n.d.). An historical background on the sanitary facilities that considers the material remains at the site provides another index to the performance of the corporations in maintaining sanitary conditions.

Sanitary Facilities and Waste Management

In light of the 19th-century miasmic theory of disease, the privies located in the sheds behind the boardinghouse rows (Kenngott 1912: 48-49) were obvious areas of sanitary concern. The fact that the privies were housed within what are shown on maps and photographs as permanent structures (e.g., Sanborn Fire Insurance Maps 1983; Locks and Canals Photo File #2173) , and that space was limited, very strongly suggests that the privies at the Boott Mills boardinghouses were no mean holes-in-the-ground that were abandoned as they filled. Rather, the privies were structurally substantial underground vaults that could be emptied as the need arose. Lowell Board of Health regulations on acceptable forms of privy vaults varied little over most of the 19th century. The first regulations state only that ". . .every vault shall be made tight so that the contents shall never be within two feet of the surface of the ground. And whenever any vault shall become offensive, the same shall be cleansed. . ." (LBH 1836-1840: 11 July 1836 [see copy of regulations affixed after the minutes of 27 March 1837]). Later regulations in 1878 order that the privies needed to be underground and "tight and close" (LBH 1871-1888: 78), while the regulations adopted on 15 August 1894 were more substantive: "hereafter all privy vaults shall be made of brick and cement, and contain at least eighty cubic feet. . ." (LBH 1897: 31). By the time that this regulation was adopted, however, the Board had already ordered the removal of all corporation privies. Archeological testing in the boardinghouse area by Boston University should provide additional details on the form and location of the privy vaults.

At first, the privies at the corporation boardinghouses were acceptable, as long as they were cleaned out regularly. Cleaning privy vaults was not the responsibility of the boardinghouse keepers, but of specially licensed "night workers."

A very few months after the Board of Health was established in Lowell, the Commissioners began to investigate ways to safely remove dangerous filth from the city. The solution they arrived at was the "night-cart" system. Farmers from outlying areas would cart off the city's swill, offal (including the contents of privy vaults), and rubbish during the evening (hence, "night workers"). Ostensibly, the swill and offal would be used for fertilizer, but more often the former would be fed

to pigs and cows. Since the work was, from the 19th-century perspective on the causes of disease, extremely dangerous, the operators of the night-carts were required to obtain licenses from the city (LBH 1836-1840, passim). Part of the requirements for a man (this was a male occupation) to obtain a license from the Board to do night work was demonstrating ". . .by certificate or otherwise, that he is responsible, and a man of good and regular habits" (LBH 1836-1840: 13 August 1838). As the century progressed, the night-cart system was found to be as much of a nuisance as the danger it was designed to overcome. Rules and regulations were promulgated, with varying degrees of success, to deal with leaking night-carts, price gouging by the night workers, and other bothersome practices (see, e.g., LBH 1893: 8-10). One Lowell correspondent portrayed the situation dramatically.

> Since I have spoken of [privy] vaults, I may as well refer to our wretched night-cart nuisance. After ten o'clock, every night during four of the finest months of the year, the hoards of farmers who are granted licenses to empty vaults when and where they please, charge upon the city in various quarters at once, and hold the entire community under their absolute sway. It is needless to say that these operations, attended as they are with almost unendurable stenches, are a disgrace to the city (quoted in MSBH 1874: 525-526).

Although graphic, the writer's portrayal of the night work may be somewhat exaggerated, since by 1838 regulations were in place that, among other directives, forbade the commencement of night work before 10:00 p.m. (LBH 1836-1840: 13 August 1838). The application procedure to obtain a license to do night work also implied that it could be revoked. It does not appear, however, that any licenses were revoked for insubordination until 1892 (LBH 1893: 8-10).

By the late 1870s, the Board prohibited the cleaning of privy vaults between June and October "except by an odorless process" (LBH 1871-1888: 82). Liquids were mechanically pumped, and solids shoveled, out of the vault and into a tank or sealed barrels. A "marl" deodorizer was sprinkled into the vault (LBH 1891: 16; LBH 1894: 6-8).

The Board eventually phased out the night-cart business altogether. This was accomplished by pressing the city to construct public sewers, prohibiting the construction of new privies along streets where sewer lines were in place, and ordering old privies to be closed and replaced by water-closets (LBH 1871-1888; LBH 1894). In 1890, the Lowell Board of Health had been instrumental in introducing a refuse incinerator to the city. "Under no circumstances would. . . [the Board] be willing to return to the old method of swill-house distribution to farmers, and. . .[the Board] is also convinced that cremation of the garbage is more satisfactory to the inhabitants of a city than the rendering process" (MSBH 1894: 768). Although it is not clear whether the "rendering process" meant night work, this seems to be the best interpretation.

As the century progressed, the continued presence of privy vaults within the city became an intolerable nuisance. Perhaps this was partly the result of aesthetic displeasure, problems of untrustworthy night-workers, and the emerging confidence in the germ theory of disease transmission, though the latter is more evident in the efforts made to combat outbreaks of typhoid resulting from polluted water supplies (MSBH 1893: 671-692). The records of the later years, however, reveal a partial acquiescence to the continued use of privies in rural areas, but through persuasion, education, and regulation, the Board was determined to eliminate privies within the city limits.

> Where a house is situated on the outskirts of the city, remote from other dwellings, its inmates can without danger make use of a privy vault if it is not too near the house, is frequently cleaned, and is tightly constructed so as not to contaminate any well by leakage of its filth. When in the process of time the growth of the city hems in this house closely by other buildings and tenement blocks, the same vault becomes

> a nuisance. It becomes leaky with age, its contents contaminate the surrounding air, and above all it is especially a nuisance when it is being cleaned. A privy vault in the built-up portions of a city is a relic of a by-gone age. Although it may be a sign of a city's rapid growth, it shows a lack of sewer facilities and an inadequate support of the Health Department in times past. When all the vaults are removed from the thickly settled portions of the city, it will be far better for the health of the people, and will dispose of a very troublesome and vexatious problem (LBH 1891: 18).

By gentle persuasion, the Lowell Board of Health intended to convince corporations, tenement landlords, and homeowners that the continued use of privies in a developed city was not so much a danger, unless located in proximity to the drinking water supply, but a sign of backwardness, ". . . a relic of a by-gone age." Interestingly, the Lowell Board of Health placed blame on former political administrations for the then-current situation, ". . .an inadequate support of the Health Department *in times past.* " By removing responsibility from the present administration, as with their pedantic encouragement of proper sanitary facilities, the Board produced a narrative that was also quite effectively self-aggrandizing.

On 1 April 1890, the disillusionment associated with the night-cart system as well as the general dissatisfaction with the continued presence of privies within the city brought the Lowell Board of Health (1888-1893) to "order out" the privies associated with the corporation boardinghouses

> Voted
> That the Agents of the following Corporations,-- The Launnance [Lawrence] Mfg. Co. The Merrimack Mfg. Co. The Boott Cotton Mills The Massachusetts Cotton Mills and the Lowell Machine Shop be notified to remove the vaults on their property within 60 days from the time of notice thereof.

The Board (1888-1893: 1 April 1890) then went on to list the number and locations of the privies on these corporations' property, including those owned by the Boott Mills:

> 5 vaults in the rear of Numbers 49 to 56
> 4 " in " " " " 41 to 48
> 8 " " " " " " 65 to 79
> 4 " " " " " " 9 to 16
> 4 " " " " " " 1 to 8

On 24 March 1891 no corporations were entered onto the "list of vaults which have been ordered out and where the order has not been complied with" (LBH 1888-1893: 18 March 1891). Yet it was not until 1892 that 16 of the privies at the Boott Mills boardinghouses were "discontinued and filled with earth" (LBH 1893: 16, 18). Out of the 25 privy vaults ordered out in 1890, this left nine vaults unaccounted for in the records.

Earlier, the Board had written on the fairly acceptable conditions of privy vaults on corporation property.

> The subject of corporation vaults, so-called, has received careful attention. These are the vaults belonging to the dwelling houses provided by our large manufacturing corporations, for their employees. These corporation houses and their vaults are under the control of gentlemen who have shown in many ways their interest in the welfare of their operatives. As a result, there is in most of these cases, unusual

> care taken in keeping the privies clean, and in the removal of the contents of the vaults. Nevertheless, such privy vaults come under the head of vaults in thickly settled portions of the city, and as such, demand removal. During the year the Boott Cotton Mills, without order from this Board, has continued the gradual removal of its vaults. By order of this Board, the Massachusetts Cotton Mills has removed the vaults connected with its Paige street block, the Lawrence Manufacturing Company and the Tremont and Suffolk Mills all their vaults between Tilden and Suffolk streets. Besides the unremoved vaults of the above mentioned corporations, the only large number of corporation vaults remaining is connected with the Lowell Machine shop. Inadequate sewer facilities and the unsettled site of the new government building have interfered somewhat with the removal of privy vaults on corporation property (LBH 1889: 17-18).

Reasons cited for the removal of the corporation vaults, then, were not necessarily based on problems of cleanliness, but rather because of the nuisance engendered by the presence of many privies in a well populated area.

The corporations realized that their continued reliance on the privy system was archaic, politically unsound, aesthetically displeasing, and expensive. Although the initial investment in introducing indoor facilities was probably large, "the cheapness of caring for water closets as compared with cleaning vaults. . .[had] induced many property holders to remove their privies" (LBH 1889: 16). For the report of 1890, the Lowell Board of Health (1891: 20-21) could write that "the sanitary accommodations of the corporation houses are far better than when the work of vault removal was begun three years ago. Some of the best and most thorough plumbing work in the city may be seen on one of our corporations."

Blanche Graham, a former resident of the Boott Mills boardinghouse at 95-97 John Street recalled that there was a single bathroom with a flush toilet in the house. By the time she lived there, beginning ca. 1908, the sheds in the back had been converted for coal storage and held trash bins (see Chapter 5). With the removal of the privy vaults, then, the corporation had indoor facilities installed at this location. A map at the Lowell Engineers' Office (n.d.) shows that an 18" sewer pipe was laid along French Street only in 1921. The Boott Mills boardinghouses must have had an independent drain system, although a "Corp. drain not disturbed" noted on the undated sewer map is the only historical evidence for this system. Further research is needed to detail the switch from the privy system to the use of flush toilets and attendant plumbing.

Potable Water Supply

The Merrimack River was one of the virtues of the Lowell area considered by the Boston Associates in the early 1820s. The swift-moving water would provide power as well as fresh water for the city. The rapids would also flush away the city's waste water. This was the plan, and if Lowell had been the only city to partake of the river, the vision may have been realized. Other industries located upstream of Lowell, however, also took advantage of the river as a waste outlet (Center for History Now 1983: 91; MSBH 1893: 671-692).

Drinking water for the Boott Mills and boardinghouses was first supplied by two sources: neighborhood wells and water drawn from the canals (MSBH 1893: 675). Although the public water supply for the City of Lowell was first introduced in the 1870s (Wortzel 1980), and different buildings on the Boott Mills property were first connected to the system between 1873 and 1906 (Lowell Water Department Records), certain boardinghouses were still supplied with well water far into the 1890s (MSBH 1893: 675). In taking drinking water from wells, the Boott was safe as long as the wells were not contaminated by leaking privies. In 1893, water from a well "on the

Boott corporation" was analyzed, indicating that there was concern over possible contamination, but the results were not described (LBH 1888-1893: 20 June 1893).

The discovery of one of the Boott wells during archeological reconnaissance was serendipitous (see Chapter 7). It is the best evidence available for the study of the water system, because historical documents that describe the form or location of the Boott wells have not been located. Additional historical and archeological research will be required to fully delineate the form, location, and length of use of the Boott wells, as well as to trace other city water connections and to explore the hypothesis that city water was first supplied to buildings housing the most socially prominent or affluent residents. Honerkamp and Council's (1984: 27) suggestion, that the sequencing of services throughout a city is often correlated with the socio-political rank of the residents, may or may not be supported.

Exceptionally good records at the Lowell Water Department make it possible to trace the chronology of city drinking-water pipe connections on the Boott Mills property. From the card file indexed by street address, it is possible to ascertain when pipes were first connected to city water, what sort of replacements in pipe type (size and material) were made, and in some instances, when and why the connections were terminated. Streets searched included Amory, Bridge, Brookings, French, John, and Sirk. Listings for the Boott Mills occurred only on Bridge, French, and John Streets. As detailed in Table 6-1, different boardinghouses were first connected to the city water system at irregular intervals between February 1873 and 1903. Most of the pipes were disconnected in the 1930s, 1940s, and 1950s, as buildings were condemned or razed, or for other reasons. Two of the connections are still in use; that at 190-196 French Street (part of the Sirk/Surf Building) and the four-inch "domestic service" pipe to one of the mill buildings (Lowell Water Department Records). Blanche Graham remembered that there was running cold water at a sink in the single bathroom at the #95-97 John Street boardinghouse where she lived from ca. 1908 to 1912 (see Chapter 5).

Some sinks located in the mills drew on canal water for general use, but ostensibly not for drinking. One writer (MSBH 1893: 675-676) noted, however, that some workers in the mills were drinking the canal water. Canal water was often preferred by mill workers because it was cooler in the summer than the city or well water supplied to the mill for drinking. In some mills, the faucets that supplied canal water were more conveniently located than the taps that provided city or well water. In a few cases, buckets of well water had to be carried in from outside the mills, and, not surprisingly, the "bobbin boys" lessened their drudgery by making a bee-line to the nearest canal water faucet. One overseer expressed that he ". . .so much preferred the polluted canal water for drinking that he did not want to have any other water in the rooms under his care" (MSBH 1893: 675-676). His cavalier attitude affected not only his own well being, but also jeopardized the health of the workers for whom he was responsible. Because waste entered directly into the canals from the primitive "water closets" or tower privies (Figure 6-1) at every mill along the entire length of the river (these took advantage of the flush generated by the mills' tailraces), the potential for water-borne infection was great. In 1891, the Lowell Board of Health (1888-1893: 19 January 1891) ordered that warning signs be placed over the faucets supplying canal water to the mills. Even though the signs were in place, the drinking of canal water continued at least until 1897, when the Board met with agents from the corporations to promote a more concerted effort to discourage its consumption. Whether the ". . .feeling of hearty co-operation by all to that end" perceived by the secretary of the Board translated into immediate action by the corporations is difficult to ascertain (LBH 1898: 40). In any case, the arrogance expressed by the overseer, the five years between the time the danger was made known to the corporations and the time that actions were taken to correct the situation, reinforce the thesis that workers had little control over such rudimentary needs as safe drinking water. Not insignificantly, actions taken to ameliorate the unhealthy working conditions had to be initiated, and followed through, by a government entity. Further research is needed to explore workers' concerns about factory conditions and their efforts to have them corrected.

TABLE 6-1
BOOTT MILLS CONNECTIONS TO CITY WATER

Source: Lowell Water Department Records

Street Address	Date Connected	Pipe Type	Date Disconnected†
40-41 French corner of 51-54 James [Sirk]	4/1874	1" Iron	[1]
40 French	7/10/1913 10/1933	1" Galvanized Iron 1" Copper	[2]
40-41 French	10/1892	3/4" Lead	11/3/1939 [3]
43-71 French	4/1874 6/1890	2" Iron 3/4" Lead	12/21/1937 [3]
43-46 James [Sirk] 50-52 French	?	1" Iron	3/9/1981 [4]
68-70 French	10/1874 11/8/1915	1" Iron 1" Lead	?
68-70 French 92-98 John 39-40 Amory	10/1874 11/8/1915	3/4" Lead 1" Lead	?
78 French 95-97 John	12/12/1873	3/4" Tin-lined Iron	10/5/1955 [3, 4]
85 French	8/1888 10/5/1939	1" Lead 3/4" Copper	8/15/1955 [3]
86-88 French	6/1901 12/30/1918	1" Tin-lined Iron 1" Galvanized Iron	4/11/1934 [5]
95-97 French	6/26/1888	2" Iron	11/17/1949 [1, 4] 8/23/1956 [6]
96-98 French	4/1874	1" Cement	?
190-196 French	7/1903	1 1/2" Tin-lined Iron	[7]
63-65 John, corner of French & John	5/1874 5/11/1948	1 1/2" Iron 1" Copper	7/1903 4/1/1942 [8] 8/30/1955 [1]
Armory [Amory], corner of Bridge	4/1906	4" Cast Iron	[9]

†Notes: 1, Service abandoned or discontinued. 2, Meter removed in 1955. 3, Building razed. 4, Cut off at main. 5, Meter disconnected. 6, Shut off, building to be razed. 7, Still in use as of 2/28/1964. 8, Condemned. 9, Still in use as of 10/4/1981.

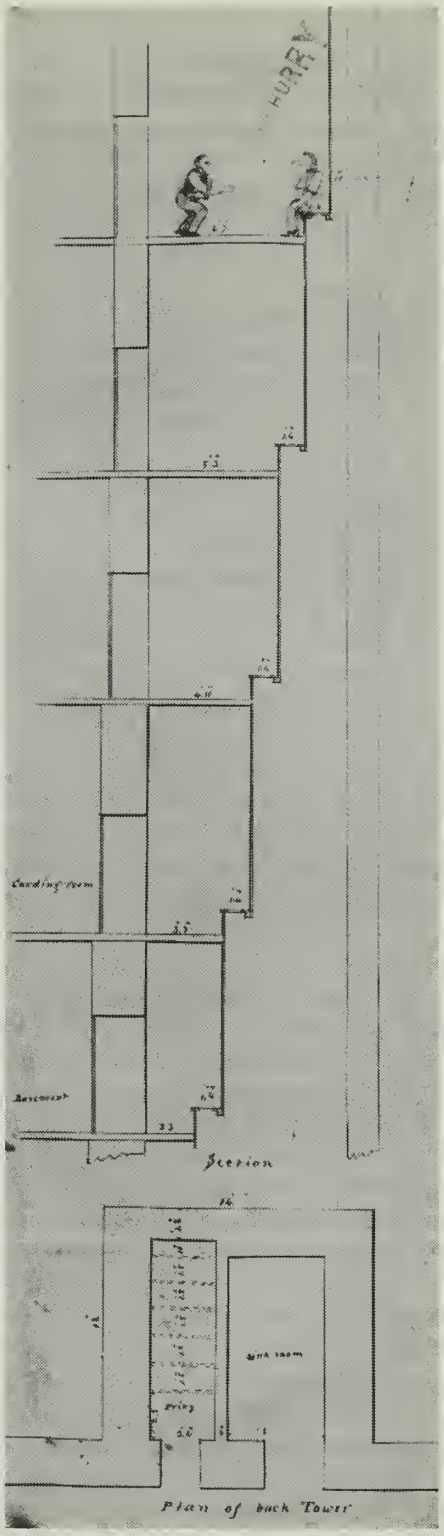


Figure 6-1. Tower privy at the Wauregan Mills, Wauregan, Connecticut. Contextual data indicate that this drawing was made during the mill's 1857-1858 rebuilding campaign (Richard M. Candee, personal communication, March 1986). The figures, added at a later date, graphically illustrate the function of this structure. From the collection of J. A. Attwood III, "undated plan of back tower," Old Sturbridge Village Research Department Negative #X661-1. Reprinted by permission of Old Sturbridge Village.

Work in the Mills

To varying degrees, the policy of corporate paternalism, explored here through waste and water management facilities, served the interests of workers as well as the self-interest of the company. Neither Bartlett (1841) nor Miles (1846), however, could avoid the fact that work in the mills was unpleasant and unhealthy. Inadequate ventilation meant that workers were exposed, in their 12-hour workday, to irritating air-borne dust and fibers that caused lung disease (Ames 1875: 75-77; Bartlett 1841: 12; Miles 1846: 68). Being on one's feet for long hours, operating machinery that required speed and dexterity, and the ever-present overseer pushing for productivity all gave rise to stress-related physiological symptoms (Ames 1875: passim). It is not unlikely that physical and emotional stress among mill workers also increased their susceptibility to the numerous epidemics that swept across the city (see, e.g., LBH 1836-1840: 10 October 1837; LBH 1871-1888: 10, 27, 34-35, 69, 190-192; MSBH 1871: 48; MSBH 1873: 470; MSBH 1875: 345-347; MSBH 1877: 451, 454).

It was not clear why, for example, 51% of the typhoid deaths in Lowell from September, 1890, to February, 1891, and 42% of all cases of typhoid in that period, were among mill workers. The writer who explored this phenomenon suggested that these figures were as much as 25% higher than the mortality and morbidity rates among the rest of the population (MSBH 1893: 686-687). The writer concluded that the use of *both* polluted city water and canal water by mill workers accounted for their higher mortality and morbidity rates. It is likely, too, that their general living and working conditions placed them at greater risk.

End of the Boardinghouse System

The breakdown and demise of the policy of corporate paternalism integral to the boardinghouse system--a situation that has been attributed to the influx of immigrant labor--gave rise to a host of ills. George Kenngott (1912: 48-49) traced this process for the Boott Mills boardinghouses:

> The houses of the Boott Mills rented for $2.02 per week for five or six rooms, with accommodations similar to the houses of the Merrimack Manufacturing Company, the water-closet being in a small outhouse in the yard. After these houses were sold, rents were doubled and trebled; and the houses, once occupied by American families, are now inhabited largely by great numbers of foreigners who sleep on mattresses on the floor, three or four in a room.

In the face of overcrowding, and the absolute lack of or deterioration of water and sanitary facilities, regulation would have to come from the city, state, and federal governments. The situation in Lowell was mirrored in other large industrial cities such as Boston and New York, where urban housing reform has occupied the minds and budgets of government agencies throughout most of the twentieth century (cf. Stone 1979).

As profits decreased, the corporations sold their housing property to tenement landlords. The tenement buildings continued to deteriorate, eventually becoming uninhabitable. Harriett Robinson (1898: 209, quoted in Huggins 1985: 6) expressed her unfavorable impressions of the houses at the end of the 19th century as compared to the early years of corporate involvement. The houses, she wrote, were no longer

> . . . kept clean and in repair as they used to be. In Lowell, when I last walked among the "blocks" where I lived as a child, I found them in a

> most dilapidated condition--houses going to decay, broken sidewalks and filthy streets; and contrasting their appearance with that of the corporation as I remember it, I felt as if I were visiting the ruins of an industry once clean and prosperous.

Always interested primarily in economic advantage, the corporations evolved from a public "benevolent" paternalism through a begrudging paternalism to a time when they no longer took responsibility for the housing of their workforce. These shifts in corporate involvement are dramatically reflected in the otherwise mundane area of waste and water management. The balance of the evidence presented in this preliminary report suggests that the textile workers, by whom these services were needed, had little control over the form and condition of such facilities. At least initially, workers wielded little power to affect changes in a system upon which they depended for their livelihood yet which often put their lives in jeopardy.

Chapter 7

ARCHEOLOGICAL TESTING AT THE PROPOSED LOWELL BOARDING HOUSE PARK SITE

by Mary C. Beaudry

Introduction

This chapter, after presenting an overview of previous archeological work on mill-period sites in Lowell, describes the field methods and testing strategy developed on the basis of the research design discussed in Chapter 2. The results of the present archeological testing program are described in detail and, insofar as possible, interpreted in light of the documentary research done for this project as well as other relevant sources. The conclusions summarize these data and offer general suggestions for future research; specific recommendations are made in Chapter 10.

Previous Archeological Work at Lowell Industrial Period Sites

Downtown Lowell has received only limited archeological attention despite its prominent position in the history of the United States and particularly in the emergence in the 19th century of an industrialized and largely urban New England (cf. Lacoste and Fiero 1979). Mill-period archeology, considered below, is a recent phenomenon, and most projects have been initiated through the activities of the National Park Service or other undertakings falling under the review process required by historic preservation legislation.

Only one previous attempt at a long-term investigation of Lowell industrial and housing sites arose through university-sponsored research. The City College of New York Archaeological Field School, directed by Dr. Robert L. Schuyler, excavated in Lowell in the summers of 1974 and 1975; the only reports on this work to date, apart from a detailed publication on a mill site in Billerica (Schuyler and Mills 1976), appear as brief entries in two supplementary issues of the Society for Industrial Archeology *Newsletter* (Nos. 7 and 8). This information has been augmented through personal communication with Prof. Schuyler, whose move to the University Museum of the University of Pennsylvania in 1976 brought an end to CCNY's involvement in Lowell archeology.

The majority of Schuyler's attention in both field seasons was devoted to excavation in a Dutton Street parking lot that covered the remains of Merrimack Company housing blocks and their backlots. The goal was recovery of materials from sealed contexts: "The architecture of Merrimack housing already has been studied; the area was still an active parking lot; the cellars had been filled with rubble; and our primary goal was the recovery of artifacts rather than architectural data" (Schuyler 1974: 4). It is apparent from Schuyler's account that artifacts from contexts other than those that were sealed were considered "secondary in nature" and that interest in reconstructing yard use and landscaping efforts was minimal. Similarly, although portions of "an extensive drainage system" were encountered, little attention was devoted to these features, which were deemed "important technological subjects in themselves" (presumably for someone else to study). Downspouts and other drain elements were recorded and photographed, however, so that it is possible to obtain information to compare with other Lowell boardinghouse sites.

Schuyler felt that the important findings of his 1974 work behind the Merrimack's brick housing for skilled workers were "two fine primary deposits . . . uncovered within two small enclosed yards" (Schuyler 1974: 4). These have been dated, on the basis of the ceramics found in them, to the 1830s-1840s and 1840s-1850s, respectively. In 1975, additional sealed deposits were uncovered; these were shallow pits lying directly outside the opposite corners of the ell of a

wooden boardinghouse (Schuyler 1976: 7). The deposits, dating to the 1840s-1860s, contained mostly ceramics that were very broken up, presumably as a result of foot traffic in the yard area. Schuyler's preliminary explanation for the difference in disposal patterns is that the yards behind the brick structure were enclosed, while those behind the wooden boardinghouse were not; he believes that in the latter case, which was more public, less dumping would have taken place and that "raw garbage" would not have been thrown out the back doors (Schuyler 1976: 7).

The aim of the analysis of the boardinghouse deposits (by Jed Levin, of the University of Pennsylvania, under Schuyler's direction) continues to be the delineation of social differentiation through study of the differences in artifacts recovered in deposits behind the brick vs. wooden boardinghouse structures, which housed workers of different skill levels (Schuyler, personal communication, October, 1985). The operating assumption is that the boardinghouse residents were *directly* responsible for the disposal of household refuse, including ceramics, faunal remains, etc. Schuyler (personal communication, October, 1985) revealed that only limited documentary research had been done for the CCNY project; it is possible that this accounts for his failure to interpret the artifacts properly in light of the boardinghouse system. This may not prove to be a shortcoming for the final conclusions of the CCNY study, however, for Schuyler states that "Complexity of the residence pattern may make it impossible to contrast and compare skilled and unskilled labor at the Dutton St. site, but if this blurring occurs the entire collection will be treated as a unit and compared with assemblages representing other segments of Lowellian society" (Schuyler 1976: 7).

The CCNY field school conducted limited excavations at three other sites that represented "the bourgeoisie that had emerged by the 1840s independent and in opposition to the older established corporations" (Schuyler 1976: 8). These sites were the Highland Towel Site at Massic Falls on the Concord River; the William Livingston residence; and the J. B. French estate (Schuyler 1976: 8). Collections from all of the sites above are now housed at the University Museum of the University of Pennsylvania in Philadelphia.

Another Dutton Street parking lot received archeological attention in 1980. This facility covers the remains of the Lowell Machine Shop and vicinity; archeological testing was sponsored by the National Park Service (Denver Service Center, Denver, Colorado) in anticipation of improvements to the lot (Fiero 1982: 1). Portions of a penstock and of the foundation of an ancillary structure for the machine shop were uncovered in the two 5 ft x 5 ft test units that were excavated in this area.

The remainder of the project consisted of drilling 45 auger holes in a random sample within the parking lot. Not surprisingly, the major finds from these borings were ground-up bits of construction material, slag, and cinders. Apart from determining the depth of fill or soil build-up in selected areas beneath the parking lot, the project director appears to have been able to learn very little from the augering program. In one of many such statements, she notes that, after attempting to interpret an auger sample, "Testing by hand excavation in this area is needed to confirm this" (Fiero 1982: 57). The frequency with which the auger encountered impenetrable objects of brick or other material suggests that any number of brick and stone features (e.g., drains, walls, pavings, etc.) may have been present; it is clear that the auger sampling method was wholly inadequate for assessing the nature, extent, and integrity of remains at the site. While the presence or absence of cultural materials and "gross stratigraphic changes" (Fiero 1982: 61) were noted, any interpretation of cultural materials can be considered no more than blind guesswork. The results of Schuyler's work described above and of others described below, including the present project, provide valuable and conclusive evidence of a rich and often well preserved archeological record in Lowell (as did the two 5 ft x 5 ft units excavated by Fiero) and provide antidotes to the largely inconclusive and misguided efforts at the Lowell Machine Shop site.

In 1982, the Institute for Conservation Archaeology, based at the Peabody Museum at Harvard University, conducted an archeological survey of the site proposed for the Lowell Hilton Inn; the hotel is located on a parcel of land that contained portions of the millyard and water-power system of the Middlesex Mills. The survey consisted of surface inspection, excavation of five

backhoe trenches, and examination of engineers' test trenches and boring logs. Although foundation segments of Mills 1 and 2, the remains of a box shed, sections of an 18-in cast-iron pipe, and other unidentified features were uncovered, the report concludes that there was "a paucity of intact archaeological remains" (Laden 1982: 18) on the parcel. The expectation that remains of features in a millyard that was in use for over 100 years should be "intact" seems naive. Further, the background research done for this project was not specific enough to delimit site development over time, hampering accurate field interpretations of any remains not already known as major features of the mill complex. The engineers' boring logs for the hotel construction, however, provide useful stratigraphic information for comparison with the Boott Mills site.

A recent archeological survey at the site of the Post Office Square Garage in Lowell (Gorman et al. 1985) is the most relevant project for comparison with the Boott Mill excavations. This intensive survey of a portion of the former Merrimack Manufacturing Company millyard and housing was conducted by the Environmental Archaeology Group under the direction of Frederick Gorman; John Cheney was Project Archeologist. Testing consisted of machine excavation of 2-meter by 3-meter test trenches (equivalent to the size of the units employed in the testing program described in this study) in areas deemed archeologically sensitive on the basis of historical evidence and known site disturbance.

Located only a short distance upstream from the Boott Mills, the Merrimack occupied a 24-acre tract on part of the "poorly drained flood terrace" (Gorman et al. 1985: 12) that had to be modified for mill and canal construction by both corporations. The Merrimack property was extensively filled (from five to nine feet of fill were brought in) to level the land surface; mill-period features were constructed through the fill and, in some cases, through both the fill and the original buried land surface. Advance planning that incorporated construction of the mill complex, mill housing, and attendant facilities with large-scale landscape alteration is indicated by the fact that in some cases features such as foundations, drains, and privies were laid down prior to the deposition of fill (Gorman et al. 1985: 44, 46, 48).

Remains of mill housing were located in a portion of the project area; these included, as mentioned above, foundations, drains, and a truncated privy. Sheet refuse deposits were not found because the original yard surfaces had been destroyed in 1965 by grading for a parking lot. The privy had been associated with wood-framed duplex housing completed by the Merrimack in 1823; it had been truncated as a result of the construction of a brick boardinghouse row, known as the "New Block," in 1836. The New Block was thus contemporary with the first blocks of Boott housing. Although only 50 cm of the privy remained beneath the cellar floor of a portion of the New Block, it is clear from its construction details that it could not have been a "tight" vault. The vault measured ca. 2.4 x 1.8 m (presumably a two-holer) and extended to a maximum depth of 2.5 m below present grade; small rock piles in each of the four corners may "have been post supports. This would indicate that the privy had been wood-lined with four corner posts that supported the privy's interior wood cribbing"; lack of an installation trench for the feature is evidence that the privy may "have been set and cribbed prior to the deposition of the sand fill around it" (Gorman et al. 1985: 44).

No evidence was recovered that would indicate whether the privy was a free-standing outhouse or enclosed within a shed or other structure. Whether this form of privy was still being built in 1836 is not known. The artifactual material from the privy's fill was considerable and dated largely to the 1830s (Gorman et al. 1985: Appendix I, 2-3). The presence of domestic refuse *and* architectural debris in the fill, which, according to Lowell Board of Health regulations ought to have been "clean" (see Chapter 6), is an interesting phenomenon and probably indicates that the abandoned privies, which had to be filled prior to new building, were used as handy repositories for a clean-up both of scattered boardinghouse trash and the by-products of demolition and construction activities.

Other evidence germane to the Boott Mills study consists of drain segments that were encountered during testing at the Merrimack. These were square box drains of brick with slate caps; one had a wood base and the other, wood laid on slate (Gorman et al. 1985: 46, 48). The

variation in construction details for the two drains was necessitated by differences in topography--the drain with a slate base was laid down in a low-lying, wet area of the site. Unlike its counterpart, it had an installation trench, indicating that it post-dated the first fill episode at the site. The other drain had been laid down prior to fill deposition in 1822/1823 (Gorman et al. 1985: 46, 48).

The archeological testing at the Post Office Square Garage location provides a great deal of valuable evidence for comparison with excavations at the site of the Boott Mills boardinghouses, not the least of which is the stratigraphic evidence of extensive landscape alterations in conjunction with site preparation for mill construction. The Boott Mill boardinghouse site may not have received identical treatment, however, as the slate ledge underlying the river terrace rises very near the surface of the boardinghouse site. This seems to have fostered innovation on the part of the architect for the Boott blocks, for, as discussed in Chapter 4, a number of the boardinghouses were stepped to accommodate the sloping topography--a topography that presumably would have been leveled if conditions permitted. Just how much landscape alteration took place prior to the erection of the Boott boardinghouses can only be determined through future excavations to much greater depths than those achieved in the preliminary testing described below.

It is unfortunate that the archeology conducted at the Post Office Square site was constrained its conceptualization by cultural resource management requirements which dictate that individual features or portions of sites be perceived of as sites rather than as components of a site, in this case, a large industrial complex. This led the Principal Investigator and Project Archeologist to give priority to the discovery of preindustrial remains at the site and to consider virtually all site components post-dating initial mill construction as disturbance. Hence the remains located during the survey (which, as suggested in the brief discussion above, were considerable), were deemed insignificant. While it is true beyond a doubt that individual features such as foundations, drains, and privies in and of themselves do not represent significant cultural resources, they take on significance as elements of an integrated system of related site components that make up a larger, complex, evolving whole. To view an urban industrial complex and its housing as a series of unrelated sites and to claim that changes to the original site configuration should be summarily dismissed as disturbance is to do a serious disservice to the resource base. The Post Office Square project, therefore, both in terms of its positive and negative contributions to mill-period archeology in Lowell, heightens the potential for the Boott Mill study to provide insight into Lowell's changing industrial and domestic environment.

Early History of the Boott Mills Site

While it is beyond the scope of this report to offer an in-depth overview of the prehistory or early history of the Lowell area (see Weible 1981 for an excellent treatment of these topics), it is relevant to point out the possibilities for archeological remains that pre-date the construction of the Boott Mills. That the territory encompassed by the confluence of the Merrimack and Concord Rivers was the location of seasonal fishing encampments by both prehistoric and historic period native Americans is clear (Weible 1981: 9-10). Further, sometime around 1000 A.D., in the late Woodland period, local tribal groups began to consolidate and to settle in small dispersed villages for at least a portion of the year. In the Lowell area, two villages were formed, one opposite Pawtucket Falls, on the southeast bank of the Merrimack and the other on the east bank of the Concord River at Wamesit Falls (Weible 1981: 9). These concentrated settlements each were located near a drop in elevation in the river in order to take advantage of the annual migration of anadromous fish--the falls being the best place to catch them in large numbers. In the seventeenth century, tribes further consolidated into a loosely organized confederacy under the leadership of the sachem Passaconaway, who made the Pawtucket/Wamesit Falls settlements one of his major villages (Weible 1981: 10).

It is not surprising that this relatively large native settlement area became the focus of proselytizing activities by the Indian missionary John Eliot, who formed the fifth of his "Praying

Indian" towns at Wamesit in 1653 (Weible 1981: 13).

> Formed by the merger of the two villages already in the Pawtucket-Wamesit Falls area, it included seventy-five Praying Indians and about fifteen-hundred acres located in the "neck of land west of the Concord and south of the Merrimack"--what is essentially the present-day city of Lowell. (Weible 1981: 13-14)

This description of the location of Wamesit seems to place it quite a distance to the south of the area that later became the Boott Mills parcel. As mentioned above, the Boott constructed its mills and housing on what had been a poorly drained terrace above the Merrimack; this land does not seem to have been desirable for settlement prior to the extensive landscape alterations begun in the 19th century. The archeological survey of the Merrimack Mills complex described above (Gorman et al. 1985) failed to locate any prehistoric remains whatever, and noted that no sites in the immediate vicinity of their study area were listed either in the archeological literature or in the files of the Massachusetts Historical Commission (Gorman et al. 1985: 15-20). Given its proximity to the Merrimack parcel, the Boott land is very likely similarly devoid of prehistoric and historic period Indian sites.

Historic settlement in the area began in the late seventeenth century, but, until the beginnings of canal construction in the 1790s, the agriculturally-based community of East Chelmsford was sparsely settled (Weible 1981: 28-58). Historical maps show no structures on the Boott parcel until ca.1821, when a farmstead belonging to Nathan Tyler ("Nathan Tylers house & land") is shown in the general vicinity (Weible 1981: Fig. 16). The map on which this is depicted (a 1928 copy of a ca. 1821 plan showing the Pawtucket Canal between Swamp Locks and Lower Locks and Surrounding Lands, University of Lowell, Special Collections) is not to an accurate scale and in fact is labeled "This Plan is taken from recollection." It is possible, therefore, that Tyler's land was not at all close to what became the Boott parcel. Additional research on ownership of this land prior to its development as industrial property is needed.

Particularly apposite to the study of the Boott Mills is the fact that a portion of its housing was constructed on the former homesite of its namesake, Kirk Boott. Boott, who was a driving force behind Lowell's growth and success, is a compelling subject for study, and material evidence of his family's daily life could prove as interesting as research into his business dealings. The *Dictionary of American Biography* describes his influence:

> Boott's personality, projected upon the town and city of Lowell, considerably determined the character of many American industrial communities. He was a pioneer of industrial feudalism, a benevolent despot, a driver of men and women, an emotional, opinionated, and well-meaning man who was endowed with constructive imagination and ability to organize (Smith and Bridges 1932: 43).

The 1825 map of Lowell and Belvidere Village shows that Kirk Boott's house and grounds occupied a large tract of land south of the Eastern Canal in an area that was later developed as Boott Mill housing (Figure 7-1). At this time construction of the Boott Mills had not yet begun, and none of the streets along which Boott housing would be built had been laid out. Boott's mansion and its outbuildings are shown as set back some distance from Merrimack Street and were approached via a wide, u-shaped drive. Boott's house was relocated to make way for Boott Mill housing; after his death in 1837, the building was used as a hospital (Gross and Wright 1985: 11). The 1850 Sidney and Neff wall map of Lowell illustrates the former Boott mansion as the Lowell Hospital in an inset (Figure 7-2). It was an elaborate Greek Revival house with a columned portico, certainly impressive enough to have served as a proud statement of Kirk Boott's position as near-dictator in Lowell.

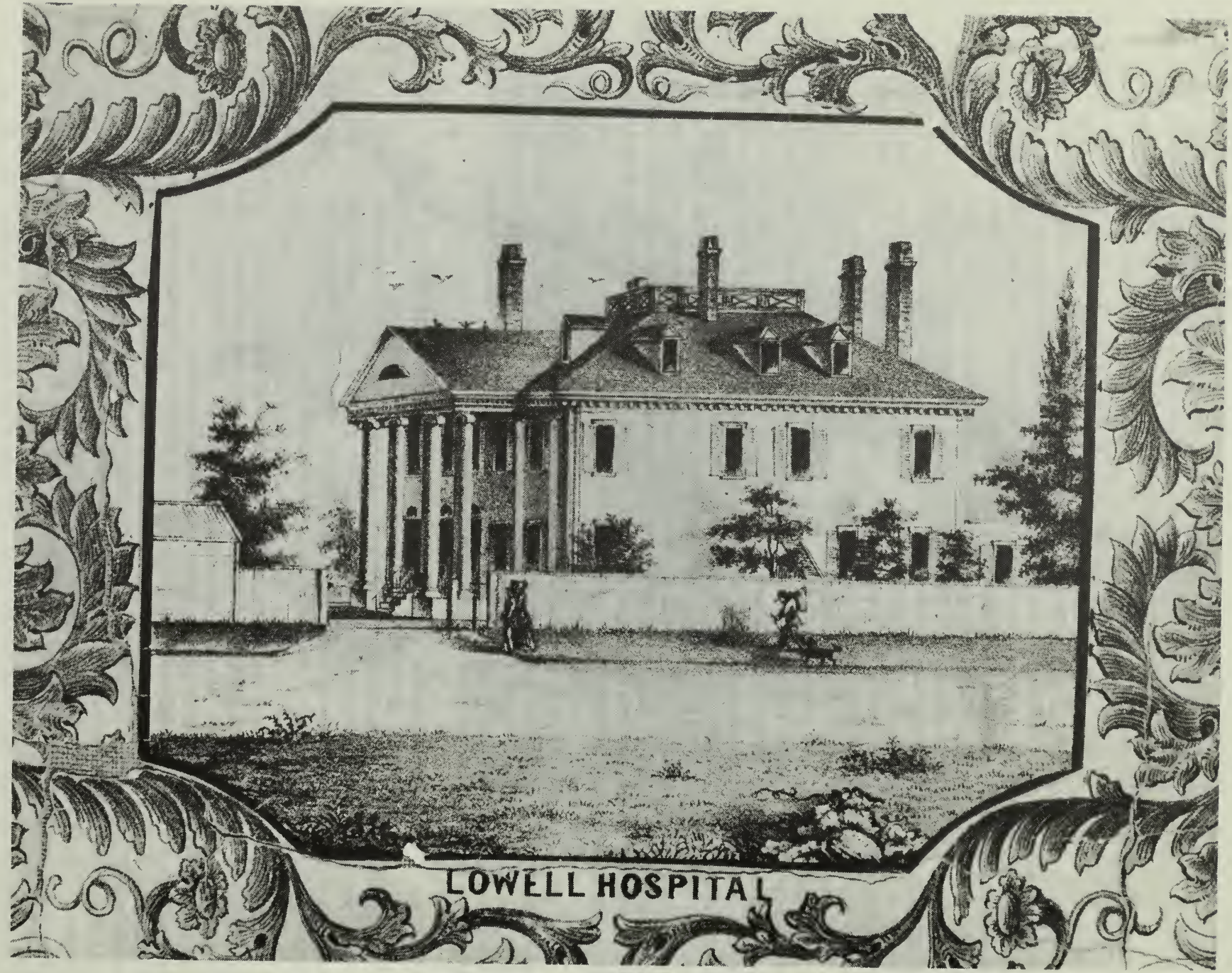


Figure 7-1. Kirk Boott's mansion after its conversion into a hospital. From the Sidney & Neff 1850 wall map of Lowell. Courtesy of the Lowell Historical Society.

The probate of his estate, filed in Lowell on June 6, 1837 (Middlesex Registry of Deeds) is not highly detailed, but it provides hints of Boott's lifestyle through the evaluation of the furnishings of his house. Although Boott's personal possessions and real estate were of considerable value, by far the vast majority of his wealth (his total estate value was listed as $53,377.00) was concentrated in his stock holdings, which included shares in the Proprietors of Locks and Canals, the Merrimack Manufacturing Company, the Boston and Lowell Railroad Corporation, Boston Gas Company, the Railroad Bank, the Boott Cotton Mills, and the Amoskeag Manufacturing Company. It goes without saying, however, that access to such wealth would have enabled Boott and his family to live in a grand style.

Furniture and movables in the two drawing rooms.	1090.00
do. in the front entry and stair case	80.00
do. in the library (including books, barometer and thermometer.....& grate	887.00
Silver ware	150.00
bathing room and kitchen furniture and articles in china closet (exclusive of silver ware)	170.00
furniture and moveables in library chamber	125.00
do. in dressing room adjoining	20.00
do. in the southeasterly chamber & dressing room	155.00
do. in the nursery	125.00
do. in chamber and dressing room adjoining nursery	125.00
do. in Frederick's chamber	15.00
do. in Kirk's chamber	30.00
do. in the attic chambers	150.00
18 boxes Sherry wine (2 doz. in each box)	288.00
21 boxes Madeira do. (do.)	420.00
7 boxes Claret, Rhenish &c.	84.00
Horse, buggy, and harness.....& saddle	330.00
Stone roller 5.00....cart waggon and harness for same 55.	60.00
[subtotal]	4384.00

While one would not expect to find these particular items in an archeological context, it is nevertheless possible that some evidence of the Kirk Boott's occupation of the boardinghouse site may be recovered; this could be in the form of trash pits (see discussion of Feature 11 below) or other subsurface features such as foundation remains.

That the grounds of Boott's house were extensive is indicated both by the 1825 map and by listings in his inventory of items such as harrows, scythes, rakes, and pitchforks, all of which seem to have been used in gathering hay to store in the "hay loft." That the immediate environs of the mansion were carefully landscaped is indicated by the presence of the stone lawn roller and by the listing of a "seed room" which may have been a greenhouse or potting shed for propagating seedlings. The buggy, wagon, cart, chaise, carry-all, and sleigh were no doubt kept in a carriage house, while the horses and horse tack would have been housed in a stable. One "swine" valued at $10.00 is also listed. The number of outbuildings shown on the 1825 map suggests a sizeable establishment with a large staff. It is therefore possible that some trace of the first Kirk Boott estate in Lowell may be found during excavations at the Boott Mills boardinghouse site.

Testing Strategy and Field Methods

The placement of sample units within the parking lot at the proposed Boarding House Park site (Figure 7-3) was based upon examination of cartographic information; the Sanborn Insurance map of 1892 was used as a specific guide for locating areas to be tested (note that street numbers

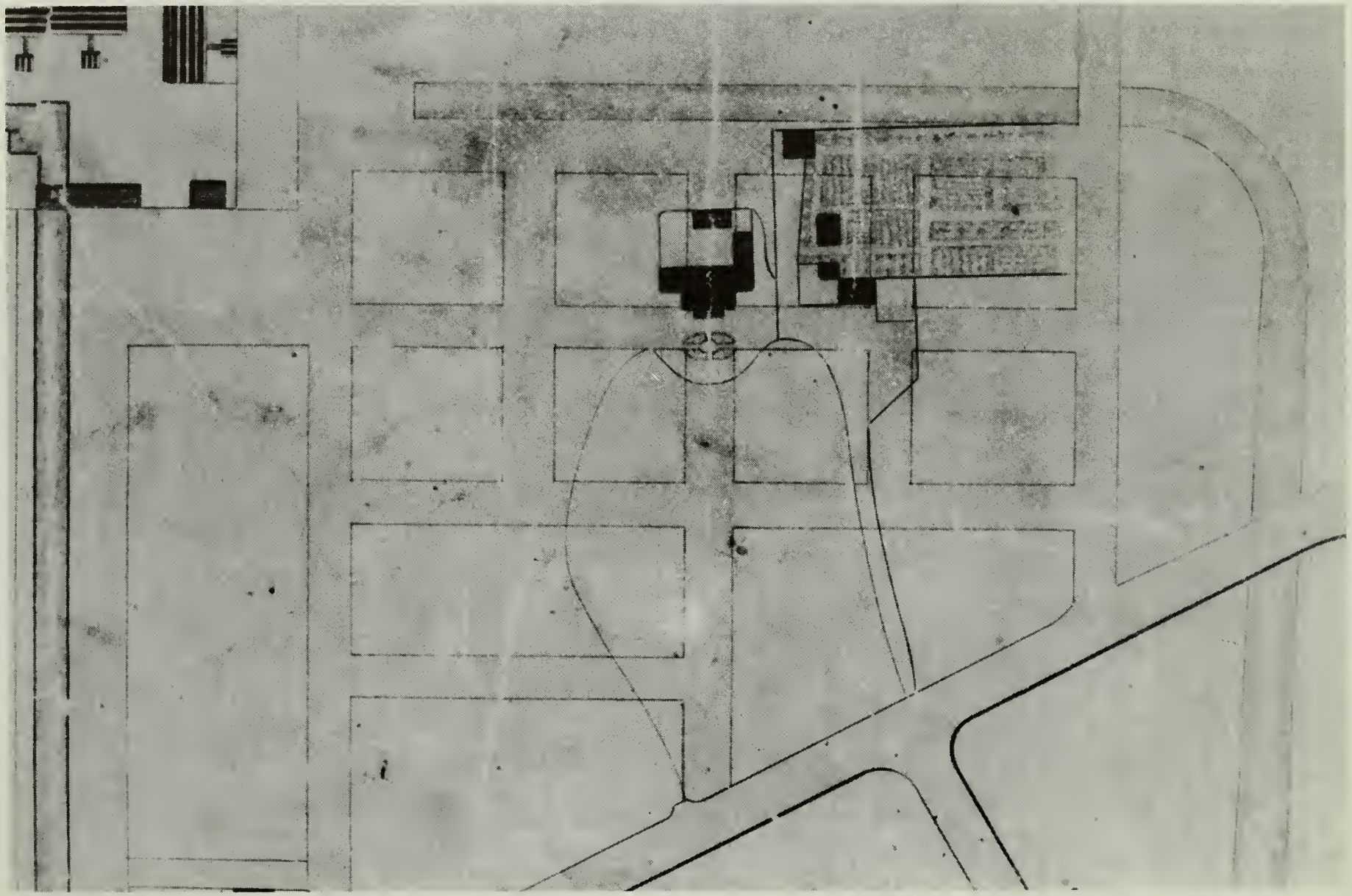


Figure 7-2. The layout of Kirk Boott's estate as shown on "A Plan of the Land and Buildings belonging to the Merrimack Manufacturing Company. . ." made in 1825 by Geo. R. Baldwin. Proprietors of Locks and Canals collection; reprinted courtesy of the Lowell National Historical Park.

given below are those that appear on the 1892 insurance map; see Figure 4-5). The 1892 Sanborn Insurance map was chosen because of its detailed depiction of the boardinghouse outbuildings as well as of the boardinghouses and their interior divisions. Before singling out a particular historical map to use for this purpose, however, Mrozowski checked the scales and distances depicted on all of the relevant maps available in the University of Lowell Special Collections. In every case, the distance from the corner of the recently restored boardinghouse along former James Street to the center of the alley between the two boardinghouses now beneath the parking lot surface was the same. This was felt to prove the accuracy of measurement in all of the maps; sample units were therefore located according to distances measured from the corners of the restored boardinghouse.

The test units were intended to encounter different areas of the boardinghouse backlots in order to sample both outbuilding remains and open yard areas. Trenches 1 and 3 were placed behind the site of the boardinghouse that had formerly faced John Street. This block had received brick ells (see Chapter 4), while its counterpart facing the restored boardinghouse across John Street had only wood-frame outbuildings. Test Trenches 2 and 4 were placed behind the latter block with the purpose of assessing the nature of the remains of these wooden structures.

Test Trench 1 was placed behind an end tenement unit, #33 John Street, in such a manner that it encountered the foundation wall of the rear of the boardinghouse at its eastern end; the western portion of the trench was located in what is shown on the Sanborn and on other maps as open yard space. Test Trench 2 was placed in such a manner that it would, according to the cartographic sources, encounter a portion of the yard, wood-frame ell, and woodshed behind #44 James Street. Test Trench 3 was intended to straddle the party wall of the brick ell behind #38 John Street and #40 Amory Street, a boardinghouse and tenement, respectively. Trench 4 was intended to expose a portion of the rear of the woodshed as well as of the alley behind #41 Amory Street (another end tenement).

While it would have been ideal to have placed the actual excavation units precisely where we wished to test, a further consideration was taken into account; the active use of the parking lot. Each 1m by 3m trench had to be placed within an area the equivalent of a parking space. The Proprietors of Locks and Canals, owners of the lot, permitted us access to a total of eight parking spaces for the duration of the testing program. We therefore located each of the four 1m by 3m trenches in the center of two parking spaces, which allowed us room both for working around the excavations and for storing backdirt while work was in progress.

Thus the test units were not placed according to grid references but according to cartographic evidence of where the areas we wished to test should be as well as according to the constraints of the parking lot layout. The trenches were marked out on the hot top of the parking lot with spray paint, and a contracting crew opened the areas with a jackhammer (Figure 7-4). Removal of the resulting fragments of hot top exposed a cinder and sand bedding for the parking lot, which was shoveled out without being screened; below this shallow level excavation proceeded in a more traditional manner. Remains of the boardinghouses and their outbuildings, as well as of other features, were found to lie directly below the bedding for the parking lot. For this reason, excavation below this upper level was done with trowels and followed natural (or cultural) stratification of the soil. Excavated dirt was screened through 1/4"-mesh hardware cloth, and soil samples were taken from each level.

All artifacts from excavated contexts were saved, and samples of mortar were taken from between bricks found in course. Gerald Kelso, Project Palynologist, visited the site to remove column samples from the profiles of each trench for palynological analysis to be performed at the National Park Service laboratories in Charlestown, Massachusetts. The soil samples, after removal of small quantities of dirt sent to Karl Reinhard for parasitological analysis, were floated in the pollen/soil science laboratory at Boston University. Results of these analyses are described in Chapter 9.

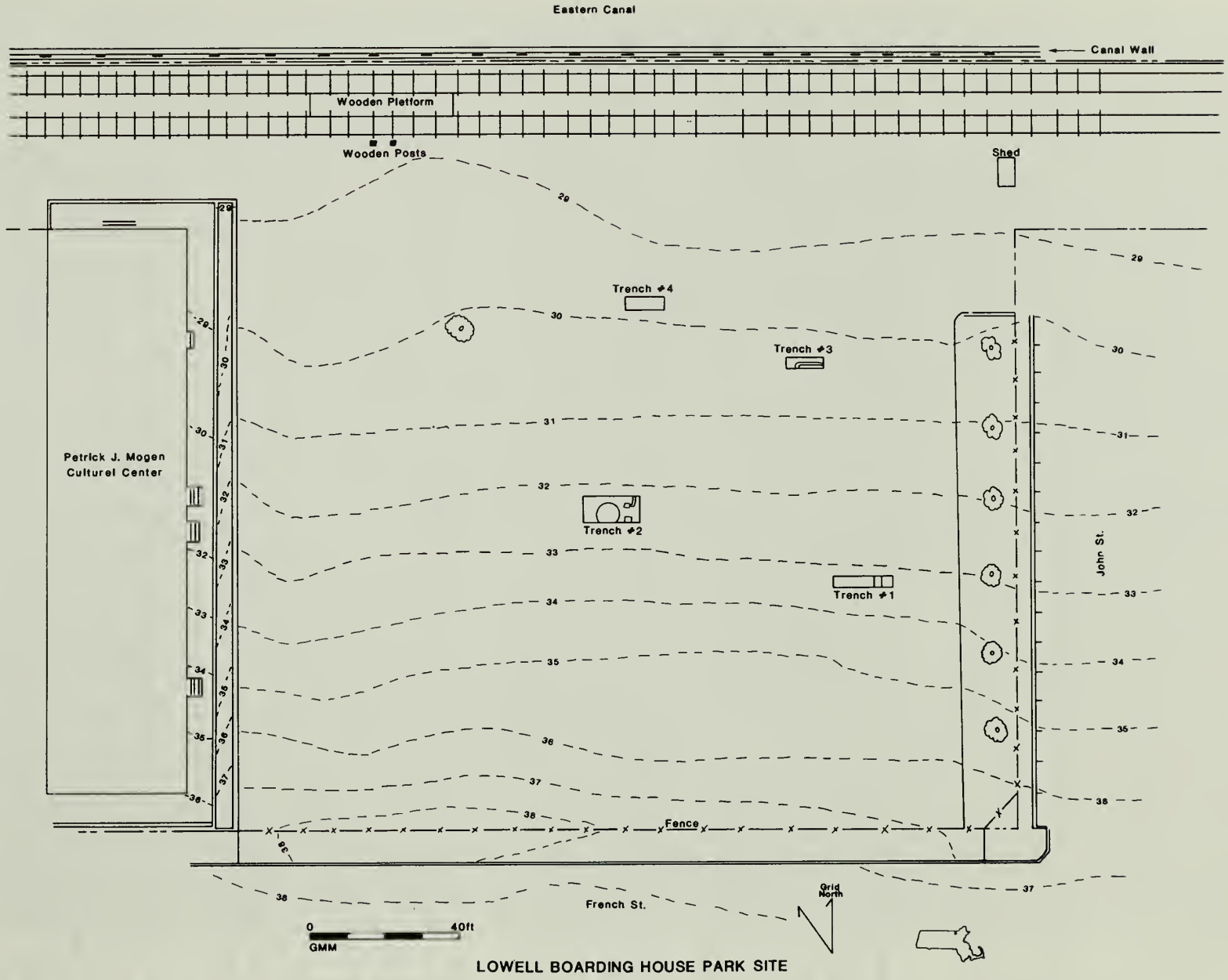


Figure 7-3. Plan of the Proposed Boarding House Park Site, Lowell, Massachusetts, showing location of excavation units.

TABLE 7-1

LIST OF FEATURES
LOWELL BOARDING HOUSE PARK SITE

FEATURE NO.	LOCATION	DESCRIPTION	ILLUSTRATIONS
1	Trench 1E	Boardinghouse foundation	Figures 7-5, 7-8, 7-9
2	Trench 2E/W	Brick-lined well	Figures 7-12, 7-13, 7-14, 7-15, 7-16
3	Trench 2E	Brick drain terminal box	Figures 7-12, 7-13, 7-17, 7-19
4	Trench 2 E/W	Trench/soil disturbance	Not illustrated
5	Trench 2E	Downspout & drip paving	Figures 7-12, 7-13, 7-18, 7-19
6	Trench 2E	Downspout/drain	Figures 7-12, 7-13, 7-19
7	Trench 2W	Foundation trench for ell	Figures 7-12, 7-13, 7-20, 7-21, 7-22
8	Trench 1W	Circular pit (posthole?)	Figures 7-5, 7-11
9	Trench 3	Brick foundation for ell	Figures 7-24, 7-25, 7-26, 7-27
10	Trench 2W	Posthole	Figures 7-12, 7-22, 7-23
11	Trench 2W	Circular pit	Figure 7-12
12	Trench 2W	Circular pit	Figure 7-12
13	Trench 2E	Brick box drain	Figures 7-12, 7-13, 7-17
14	Trench 3W	Lens w/wood chips	Not illustrated

Excavation Results

The following description of excavation results proceeds trench by trench. Because features were numbered sequentially as they were discovered, they do not form a sequence within any one unit. Table 7-1 provides a complete listing of features in numerical order.

Test Trench 1
Rear of #33 John Street

As with the other three trenches, the hot top in Test Trench 1 was designated as Level 1 (ca. 5 cm in depth) and the sand bedding as Level 2. The units were subdivided into east and west halves for excavation, and level numbers were assigned consecutively within each half. The following

Figure 7-4. A contracting crew opening excavation units with a jackhammer. The Eastern Canal and a portion of the Boott Mills complex are in the background.

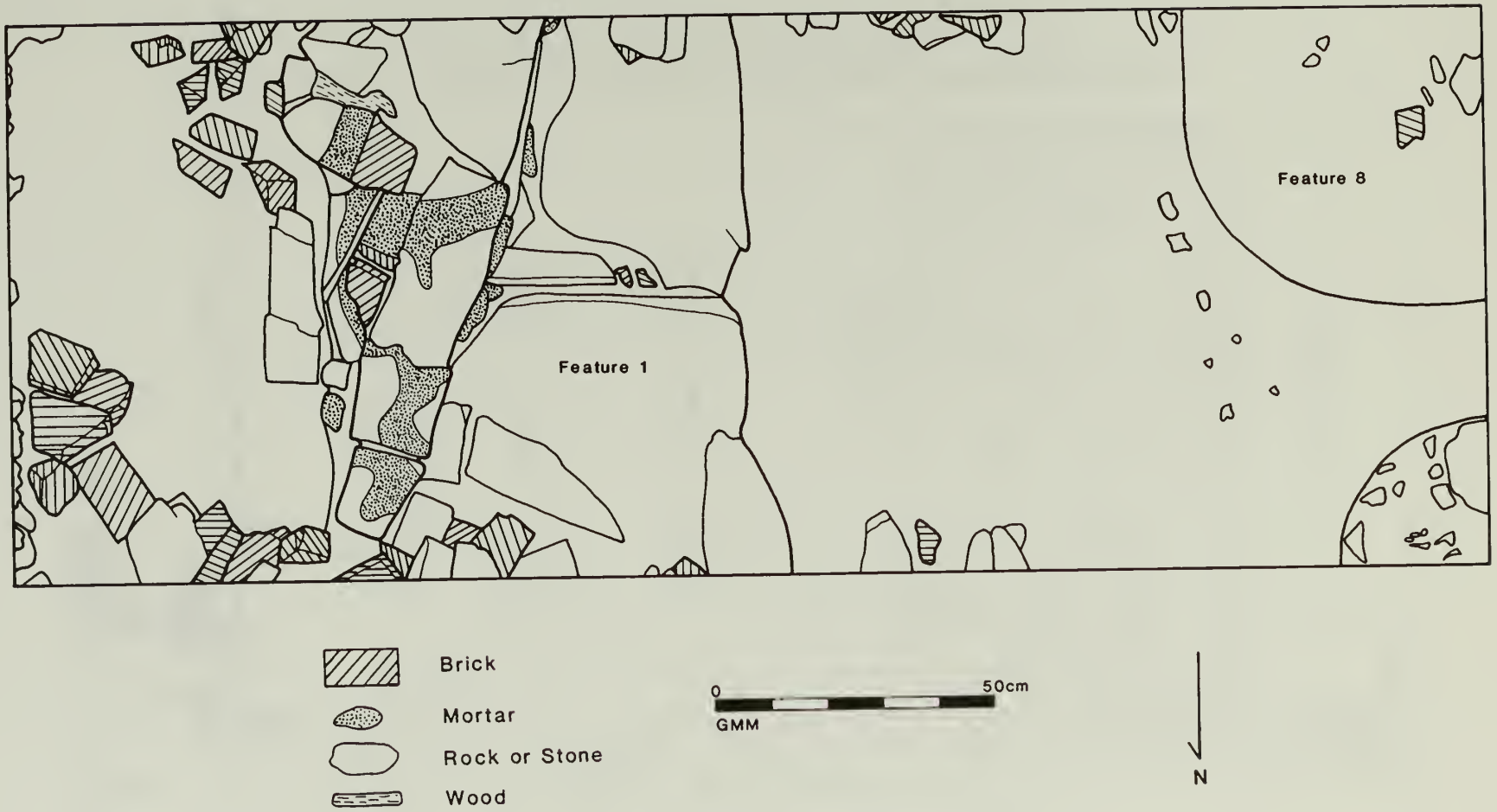


Figure 7-5. Plan of the eastern portion of Test Trench #1.

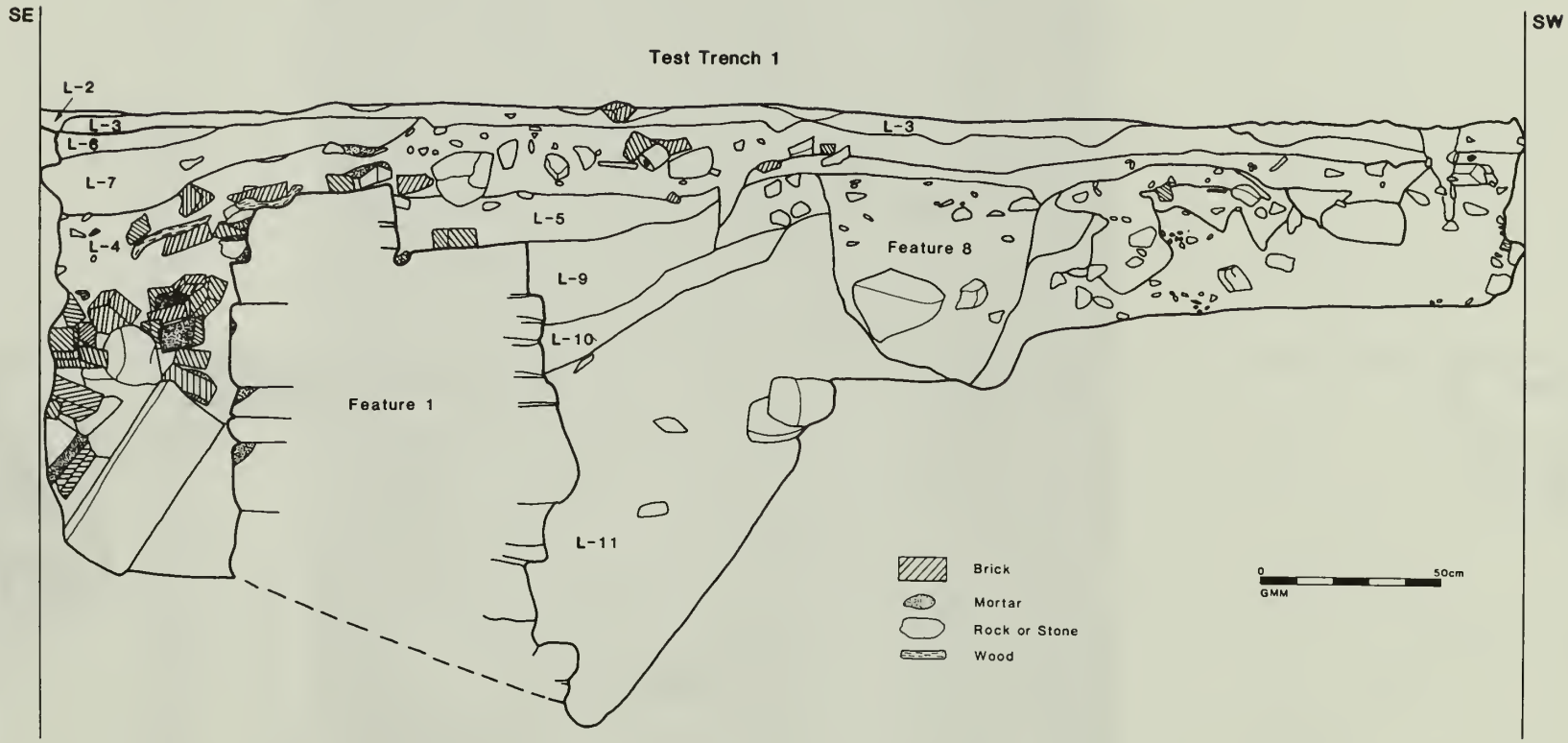


Figure 7-6. Profile of the south wall of Test Trench #1 showing cross-section of Feature 1, the boardinghouse foundation.

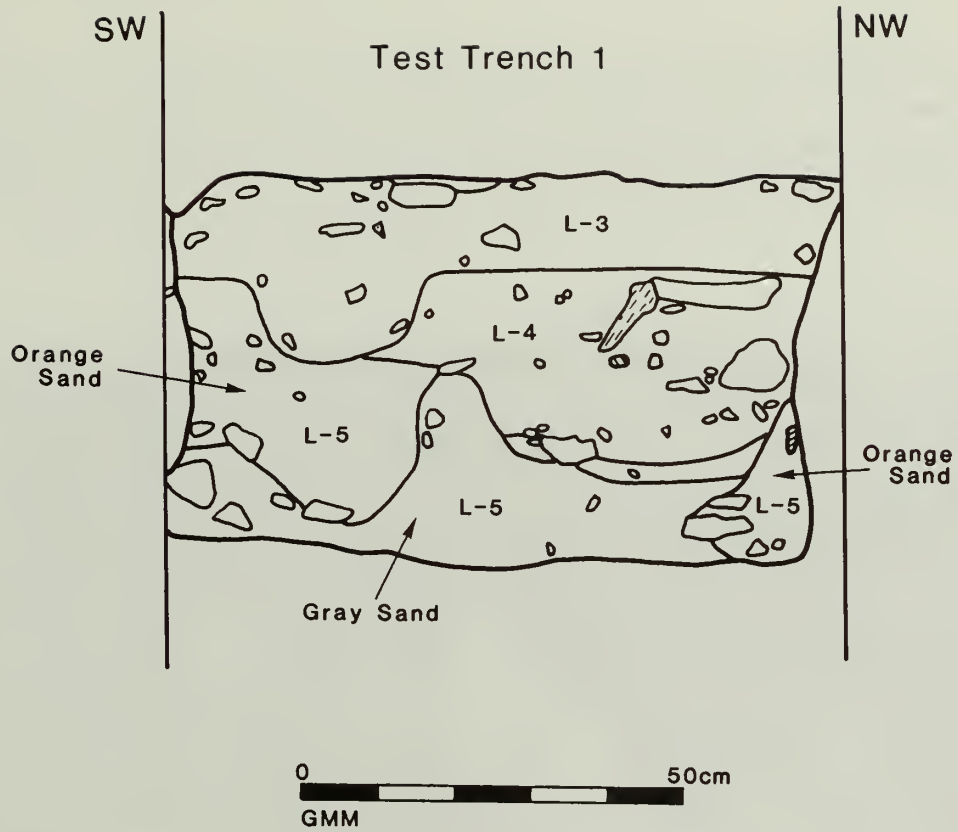


Figure 7-7. West profile of Test Trench #1; Level 4 may have been a pit very similar to Feature 8.

Figure 7-8. Feature 1, the boardinghouse foundation, in Test Trench #1. Camera faces north.

In the eastern end of Test Trench 1, Level 4 overlay what at first appeared to be a slate surface; this proved to be the uppermost, disturbed courses of the rear foundation wall of the boardinghouse (Figure 7-8). It was designated Feature 1; because it continued into the east wall of the trench, the trench was extended eastward an additional meter to expose the entire width of the foundation. Level 4 in the eastern portion of the unit differed from that to the west in having a very high mortar and brick content.

Feature 1

Feature 1, the foundation, was of mortared slate. Because the boardinghouse cellar was cut out of the natural slate ledge, it seems reasonable to conclude that the slate was obtained during construction of the cellar. The base of the foundation in fact rested upon the slate bedrock. East of the foundation, brick rubble, mortar, broken slate, and a granite lintel, along with various artifacts, comprised the dense rubble fill of the cellar. Artifactual remains included slate shingle fragments, redware, whiteware, and a corroded fragment of iron.

The boardinghouse foundation was rough yet massive and sturdy in construction and had no builder's trench *per se*. The soil on the exterior of the foundation was excavated to bedrock, however, in order to reveal the foundation's construction details fully (Figure 7-9). Excavation on the interior of the foundation, although it extended to a depth of ca. 1.5 m, did not reach the base of the rubble, which presumably extends for at least another meter or more to the floor of the cellar (Figure 7-10). It was judged too dangerous to excavate further through the loose rubble, which was subject to cave-ins. We do have a limited amount of information on the presence and depth of the boardinghouse cellars from the photographic record kept by Katie Gavan (NPS, Denver Service Center) of the work done on the restored boardinghouse (Huggins 1985) and from an elevation found in the Locks and Canals vault (see Chapter 4). If for some reason future excavations aim to expose the cellar, or a portion of a cellar, of one of the boardinghouses, it would be best to use a backhoe to remove the majority of the rubble fill. Care should be taken, however, to prevent damage to interior partition walls and chimney breasts.

Feature 8

The center of Test Trench 1 contained a small, circular pit. This was Feature 8; it lay directly beneath what had been designated as Level 5 in the eastern portion of the trench (Figures 7-6 and 7-11). Level 4, as mentioned previously, contained considerable amounts of construction debris and sloped upwards (i.e., to the west) away from Feature 1, becoming progressively shallower in depth. Feature 8 may have cut through Level 4 in an area where it formed only a thin lens above subsoil, but it did not appear as a recognizable feature until all of Level 4 was removed. The pit was slightly irregular in shape and contained a large, squared stone near the bottom. No post mold was detected, but the presence of the stone may indicate that the pit was in fact a post hole with the stone placed in its base as a support. Presumably, a post sunk to this depth could have served as a clothesline support.

The fill of the pit contained brick chips, iron fragments, a clear glass bottle, and several crown bottle caps in a matrix of dark grey-brown soil with laminations of brown and light yellow-grey. The crown bottle caps are indicative of a late 19th-century fill date for the pit; if, however, the pit cut through Level 4, this means that Feature 8 post-dates the demolition of the boardinghouse in 1942 (see Chapters 4 and 5). An alternative and more plausible explanation is that Level 4, while appearing as a demolition level, was created and spread over the area during surface grading for parking lot preparation. This would mean that Level 4 *disturbed* Feature 8 and that Feature 8 did not cut through Level 4.

Test Trench 1 contained no other features. This unit was placed in order to sample a sizeable area of the yard of the rear tenement on French Street, and this goal was met. The yard space was almost entirely devoid of features, apart from the two pits (perhaps holes for clothesline posts) containing late 19th-century artifacts in their fill. The lack of other features indicates that the rear yard probably served chiefly as an area for tasks such as laundering, clothes drying, and so forth, thereby confirming Mrs. Blanche Graham's recollection that the yards were used, at least in the early 20th century, for little else than hanging clothes out to dry (see Chapter 5).

Figure 7-9. The exterior of Feature 1. The foundation was built of rough slate slabs derived from blasting out the ledge to construct the cellar. Camera faces east.

Figure 7-10. East profile of Test Trench #1 showing boardinghouse demolition rubble in the cellar topped by soil from the backlot used to level the fill.

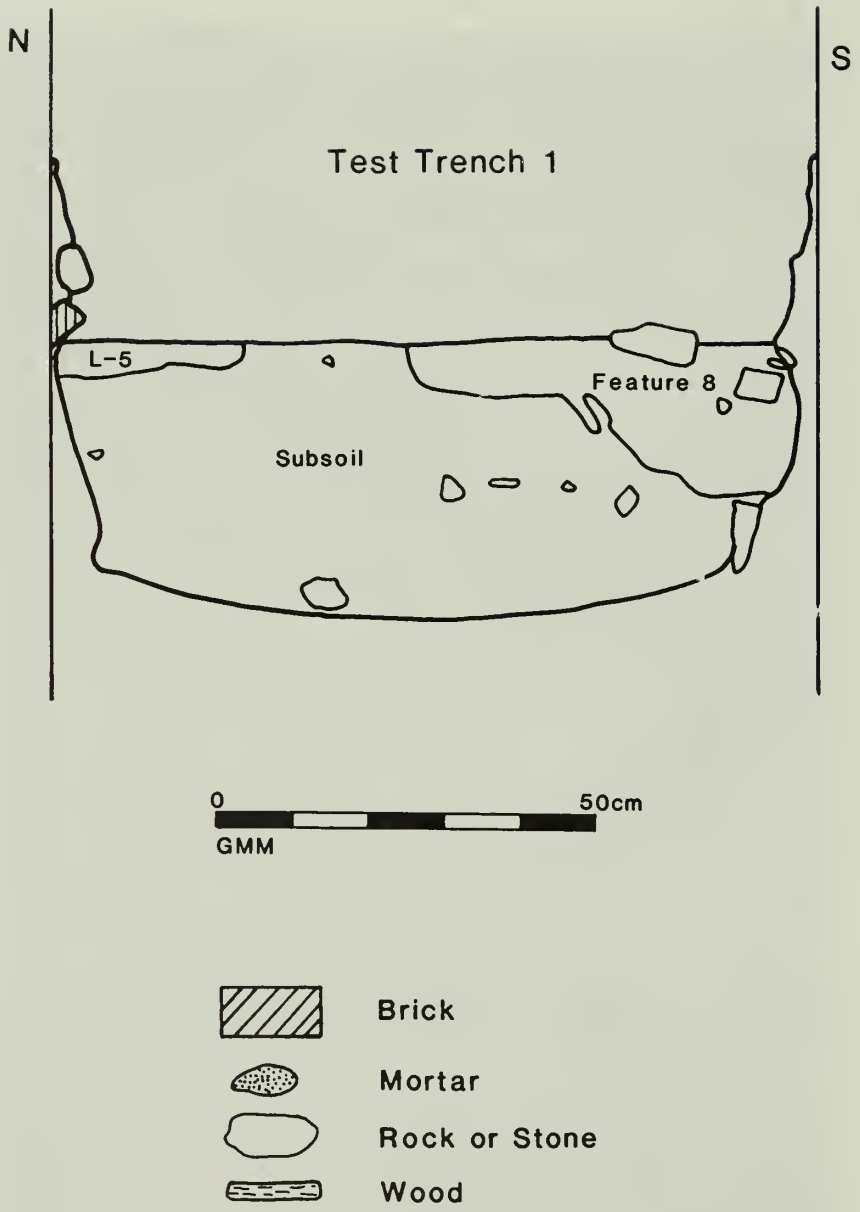


Figure 7-11. East-facing section through the center of Test Trench #1 showing a portion of the profile of Feature 8.

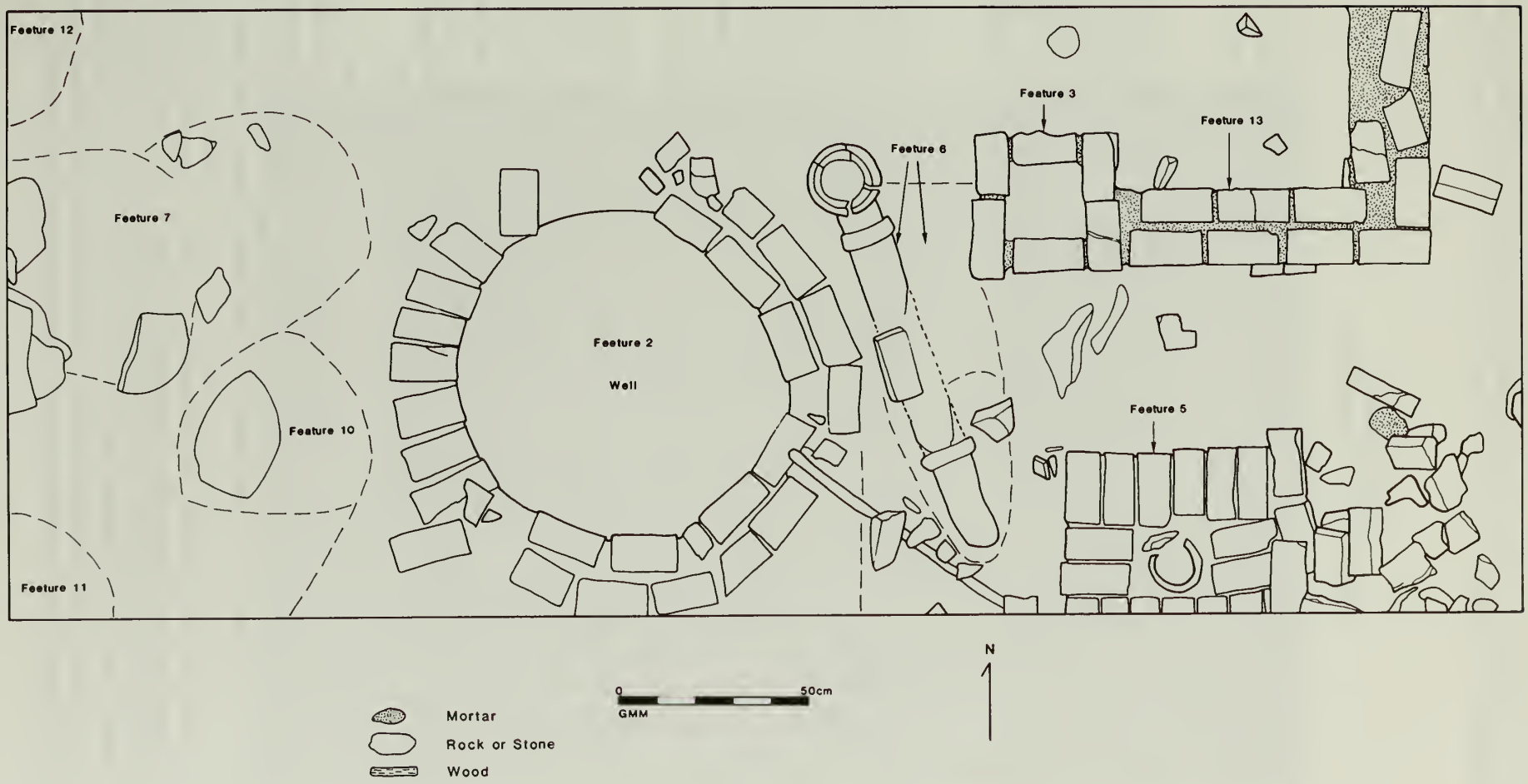


Figure 7-12. Plan of Test Trench #2.

Further, it would appear that grading either during the demolition of the boardinghouse or during construction of the parking lot removed any original yard surface that may have existed; this is supported by palynological analysis of soils pushed into the cellar hole of the boardinghouse (see Chapter 9).

Test Trench 2
Rear of #44 James Street

After removal of Levels 1 and 2, Test Trench 2 had a layer of dark brown-black soil (Level 3) that contained numerous coal ash lenses and a great deal of slag. Also found in this layer across the unit were brick fragments, pieces of corroded iron, slate and window glass fragments, and a wide variety of 19th- and 20th-century pottery types.

Beneath Level 3, a complex of features was encountered (Figure 7-12 and 7-13). Feature 2 was a brick well; Feature 3 was a square brick terminal box for a wooden downspout with associated drain (Feature 13); Feature 4 was a soil disturbance running east-west along the northern portion of the unit; Feature 5 was a ceramic downspout surrounded by a brick paving; Feature 6 was a trench containing a terra cotta drain or sewer pipe; Feature 7 was a crude stone foundation set in a trench; and Features 10, 11, and 12 were all either post molds or pits of some kind. Of these latter three, only Feature 10 was examined. Excavated features are described in detail below.

Feature 2

Feature 2, a brick-lined well, was constructed of rectangular rather than the wedge-shaped compass bricks often used for wells. These were laid in common bond (only one row of headers, the second course surviving below the surface, was detected) with a white, sandy mortar. The result produced an irregular interior of the well shaft, as can be seen in Figure 7-14. Bricks averaged 9 x 19 x 3 cm in size, although there was considerable variation. The limited excavation area did not contain evidence of a superstructure for the well, unless the post hole (Feature 10) directly west of the well is interpreted as such. It is impossible at this point to determine whether the well lay within an open yard area or within a shed or ell. The nearby presence of downspouts (Features 3, 5, and 6) is an indication that the location probably was out-of-doors, because the downspouts for rainwater collection would have been placed along the exterior of a shed or ell.

The well lay directly below the bedding for the parking lot, and its uppermost level (Level 9A) of fill contained a considerable amount of blackened, ashy, cinder-laden earth, presumably deposited when the area served as a coal yard in the 1950s (Figures 7-15 and 7-16). Initially, the well fill was to be bisected on an east-west axis, but this proved impossible when, as the second, slumped fill level was removed, it became clear that there was nothing but air for some distance beneath this layer. The second level (Level 9B), a mottled gray-brown clay mixed with orange-brown sandy soil, was so high in iron content that at its base it literally formed a concretion across the feature. This layer contained a large quantity of artifacts; most predominant were window glass, nails, unidentifiable pieces of corroded iron, and fragments of ironstone.

The architectural debris may be attributable to the demolition of the boardinghouse, although the sample of fill from deeper in the well contains similar materials in vast quantity. If, as has been speculated, the concretion that formed the base of Level 9B was formed by the total corrosion of an iron cap placed on the well when it was abandoned, the fill should not contain demolition debris. Further, if the well was abandoned when the boardinghouses along James [Sirk] Street were connected to city water, it is logical to assume that it would have been filled or capped several decades prior to the demolition of this block. Unfortunately, as Table 6-1 reveals, this address is one for which the connection date is unknown. One might speculate, however, that since the connection was via a one-inch iron pipe, it was contemporary with the hook-ups to #40-41 French Street and to #51-54 James Street, which likewise had one-inch iron pipes. These were installed in 1874. This ought to have resulted in the abandonment of the well at about this time; but, on the other hand, it may have remained open for some time as a convenient repository for trash.

Figure 7-13. Overall photograph of Test Trench #2. Camera faces west.

Figure 7-14. Photograph of Feature 2 showing the interior of the wellshaft. Camera faces north.

Figure 7-15. Bisection of the upper levels of Feature 2. Below Level 9B, which was essentially a large concretion, there was ca. 1.5 m of air above the top of the well fill. Camera faces north.

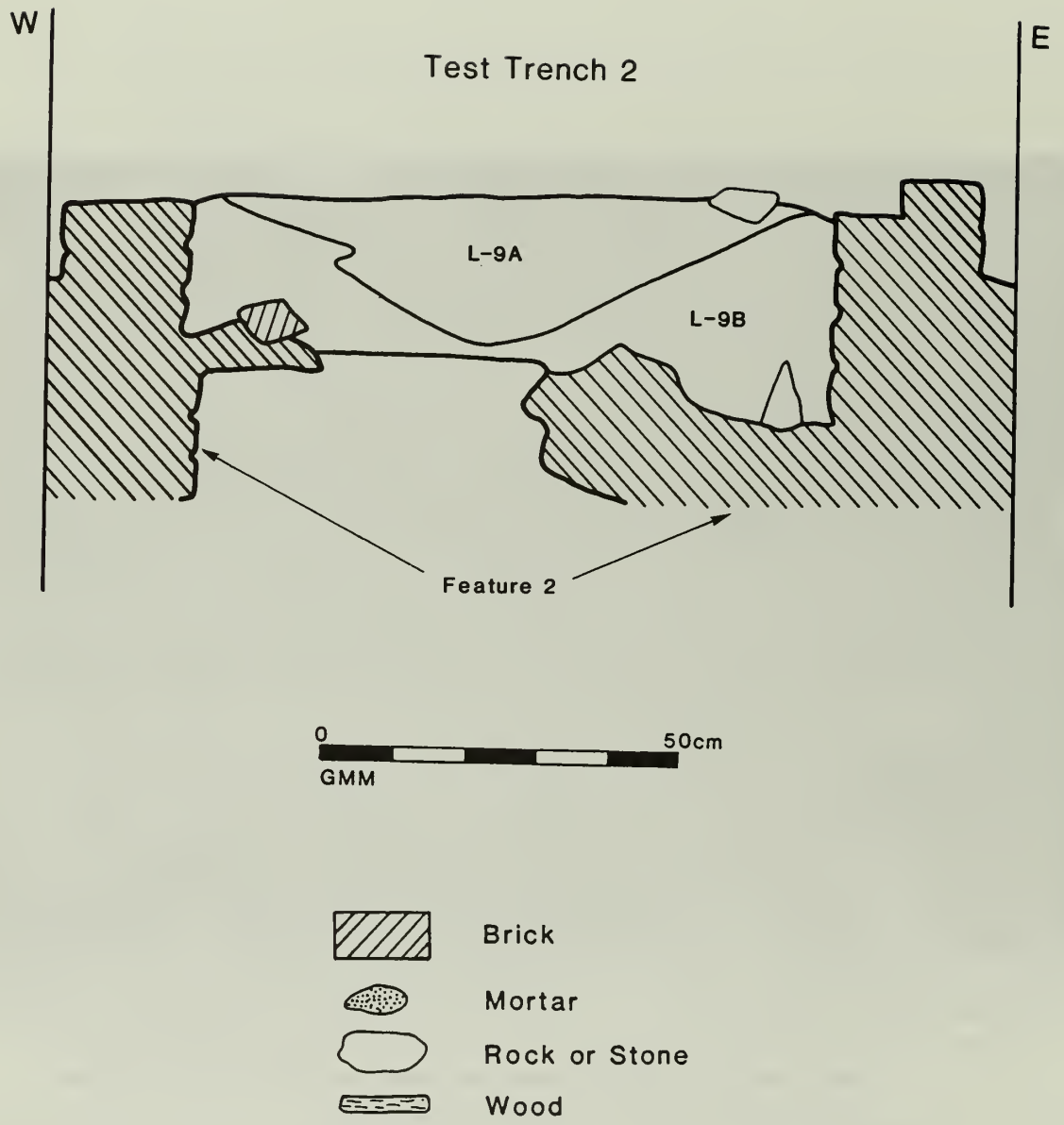


Figure 7-16. Drawing of bisection of Feature 2, facing north.

Figure 7-17. Detail of Test Trench #2 showing Features 3 and 13, a brick drain and terminal box for a wooden downspout. Camera faces north.

Figure 7-18. Detail of Test Trench #2 showing Feature 5, a ceramic drain with brick drip paving. Camera faces west.

Figure 7-19. The eastern portion of Test Trench #2, showing Feature 6, a stoneware drain pipe, flanked by Features 2, 3, 13, and 5. Camera faces north.

Another possibility is that the well was capped immediately after the city water connection was installed. In this instance, it may not have received refuse at this time. Instead, the cap may have been broken or disturbed when the building was razed some decades later, resulting in the deposition of large quantities of demolition debris and miscellaneous artifacts. If this were the case, artifacts of quite recent date should be found in the fill. Although at this point analysis is incomplete, it appears that the artifacts in the fill do not date past the 1890s.

At the top of the well there was an iron pipe that extended into the depths of the well shaft (Figure 7-16); this pipe would have brought water to the surface by means of a pump. The rotted remains of a wooden pipe that presumably predated the iron pipe were found in the fill. The fill of Feature 2 was sampled by the removal of two arbitrary increments of 10 cm in depth; these were designated as Levels 9C and 9D. The fill consisted of a dry, gray-brown fluffy soil containing very large quantities of artifacts, including window glass, nails, ceramics (plain and transfer-printed ironstone, bone china, etc.), window, bottle, and drinking glass fragments, white clay pipe bowls and stems (including one marked "GOUDA / HOLLAND"), a few animal bones, textile and leather fragments, a tortoiseshell comb, a broken poker, a portion of a cast-iron coal grate, and so forth. Although architectural debris, chiefly window glass and nails, were present in abundance, there are numerous domestic items as well. More can be said about this assemblage when analysis is complete.

Although only a total of approximately 25 cm of fill was removed from the well in all (because of the ca. 1.5 m of dead air space that occurred between levels 9B and 9C), excavation of Levels 9C and 9D brought the fill depth to approximately 2.25 m below present grade. A sounding with a hollow-core auger proved that the fill extended for at least another 40 cm (the length of the auger). It is likely that in fact it is far deeper than this. Because this phase of the project was intended to be exploratory in nature, and because further excavation in the well without adequate safety precautions would have been unwise, no additional sampling was performed. The well was covered with a concrete cap before the trench was backfilled and repaved in order to insure preservation of the feature and its contents for future excavation or site interpretation.

It should be mentioned that there is a possibility that Feature 2 may not have been a well but a privy. We do not have precise information about the form and construction of the Boott privy vaults (see Chapter 6), and cylindrical privies were not uncommon in the 19th century (cf. Roberts and Barrett 1984). Privies also often had pipes that were intended to drain off the fluid contents of their vaults, so one cannot assume that the presence of the pipes in this feature confirm its function as a well. The most compelling evidence for interpreting this feature as a well is the fact that it was not "tight" (i.e., sealed to prevent leakage of its contents). The lack of a seal on either the interior or exterior of the feature seems to indicate that it was designed to permit the percolation of ground water into the vault. If this feature served as a privy in either a primary or secondary use, it undoubtedly would have fostered ground-water contamination.

Features 3 and 13

This feature was a roughly square brick box, 33 cm by 36 cm (Figure 7-17; see also Figures 7-12 and 7-13), at first thought to be some sort of chimney or boiler flue, chiefly because it was filled with cinder and ash. As excavation progressed, however, it became evident that the feature was more likely a terminal box for a downspout, presumably made of wood, which would have collected roof run-off from the shed at the rear of the yard. This seems borne out by the fact that a brick drain (given a separate designation as Feature 13 because it was at first unclear whether this drain was a part of Feature 3) extended away from Feature 3 to the east for a distance of 59 cm, at which point it turned 90° and headed north for 48 cm into the side of the trench.

The upper portion of Feature 3 was filled with black ash and dirt; it contained window and bottle glass, brick fragments, mortar, nails, and wire. Beneath this level was a small lens of compact orange clay which contained the remains of a wooden utensil handle and a large piece of corroded iron. Beneath this lens was more of the black ashy soil with a high sand content. Once again, brick and mortar fragments as well as window glass comprised the bulk of the artifactual material in the fill. The bottom of the feature, encountered at 67 cm below the top course of bricks,

was a fieldstone; eleven courses of mortared brick extended above this. An opening on the eastern edge of the feature leads into Feature 13, the brick drain mention above. The fill seems to have resulted from the use of the area as a coal yard rather than from the feature having functioned as a chimney or flue of any sort.

Feature 13 was exposed only at its uppermost course of bricks, and it is therefore impossible to provide details on the size or extent of the feature; further, the destination of the drain, because it continues beyond the boundary of the excavation unit, is impossible to ascertain. The bricks of Feature 3 and Feature 13 all measured approximately 20 cm x 10 cm and were bonded with a white, sandy mortar.

The arrangement of terminal box and drain seems quite appropriate for collection and channelling of rain water away from the rear yard of the boardinghouse. A possible alternative interpretation of these features may be posited, however: the arrangement may have served as a venting system for a privy enclosed in the shed. Such vents or flues, in the form of iron pipes with conical caps, appear in all of the photographs that show portions of the rear yards of the boardinghouses. Since we know so little of the actual form that the privies took, it is impossible to verify this interpretation without further archeology. The flues may have served merely to keep the sheds well aired so that wood supplies would remain dry.

Feature 4

This deposit of mixed orangey soil and coal ash extended along the north side of Trench 2. It appears to have been an area where overburden from the parking lot/coal yard was pressed more deeply into the underlying matrix than elsewhere and thus was not a feature *per se*. Feature 2, the well, was slightly disturbed along its northern edge by this trench-like deposit. Artifacts recovered from the deposit included window glass, ironstone, green-glazed redware, a clay marble, corroded blobs of iron, and brick rubble.

Feature 5

Feature 5, located near the southeastern corner of Trench 2, is a stoneware pipe (ca. 9 cm interior diameter) surrounded by a brick paving (Figure 7-18). This feature presumably functioned either as the downspout for a drain that collected roof run-off or as a surface drain for use either within a shed or in the rear yard. The bricks surrounding the drainpipe averaged 9 cm x 19 cm; these seemed to have served as a paving to prevent drips from eroding the surface around the pipe. They do not evidence any sort of wear, however.

Feature 6

This feature consisted of a brown stoneware pipe (ca. 9.5 cm interior diameter) set in a deep trench that cut through the installation trenches for Features 2, 3, and 5 (Figure 7-19). The pipe was laid in sections ca. 65 cm in length; the end in Trench 2 opened at the surface, much like a downspout. If this pipe functioned as a drain, its slope from north to south seems to indicate that it must have been used to channel roof run-off to a cistern or connecting drain somewhere outside of the excavation unit. The slope of the drain would have carried water *away* from the canal, in a direction that, if the trench it was set in had not been so deep, would have been uphill.

Feature 7

This feature, located in the western half of Trench 2 (Figure 7-20; see also Figure 7-12), at first appeared to be a backfilled pit of some sort, perhaps a privy or similar rectilinear feature. The area of soil discoloration was subrectangular in shape; the matrix was very mixed. Soil within the feature was, for the most part, a mottled dark brown-grey clay. It contained a great deal of brick and stone rubble, coal ash and cinders, some very deteriorated bone, window glass, highly corroded nails, fragments of alkaline-glazed ironstone, green-glazed redware, fragments of blue glass curved rods, and a white clay pipestem labeled "DAVIDSON/GLASGOW."

When clearly delineated, Feature 7 (Figure 7-21) proved to be an elongated rectilinear feature, ca. 64 cm in width, extending eastward 95 cm from the west end of Trench 2 almost to the edge of Feature 2, the well. Feature 7 cut into three other pit features (Features 10, 11, and 12; see

Figure 7-20. Detail of Test Trench #2 showing Feature 7, a foundation for a shed, before excavation. Camera faces south.

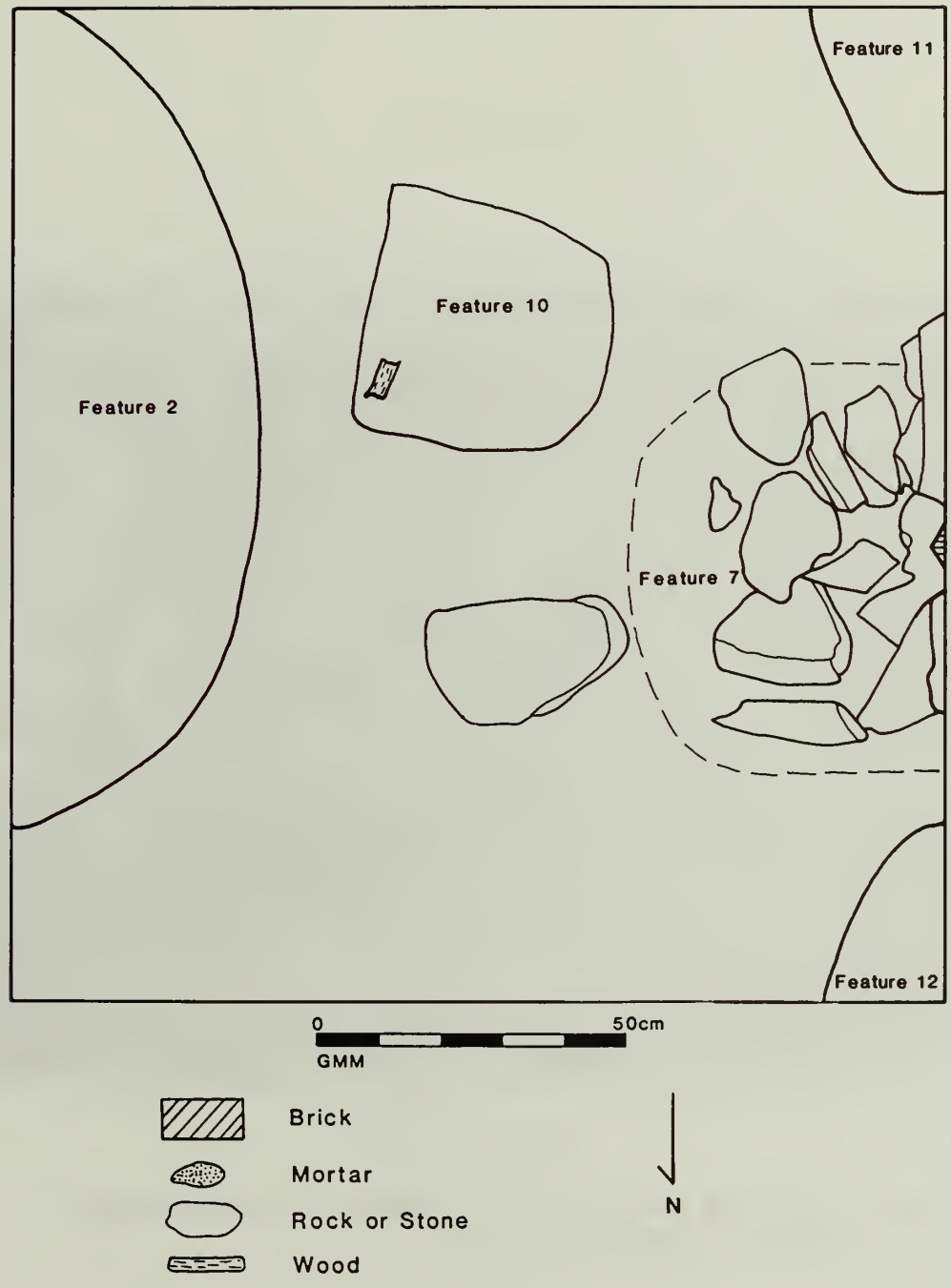


Figure 7-21. Plan of Feature 7 showing the crude nature of the foundation construction.

Figure 7-22. Detail of Test Trench #2 showing Feature 10. It had been cut into by Feature 7. Camera faces south.

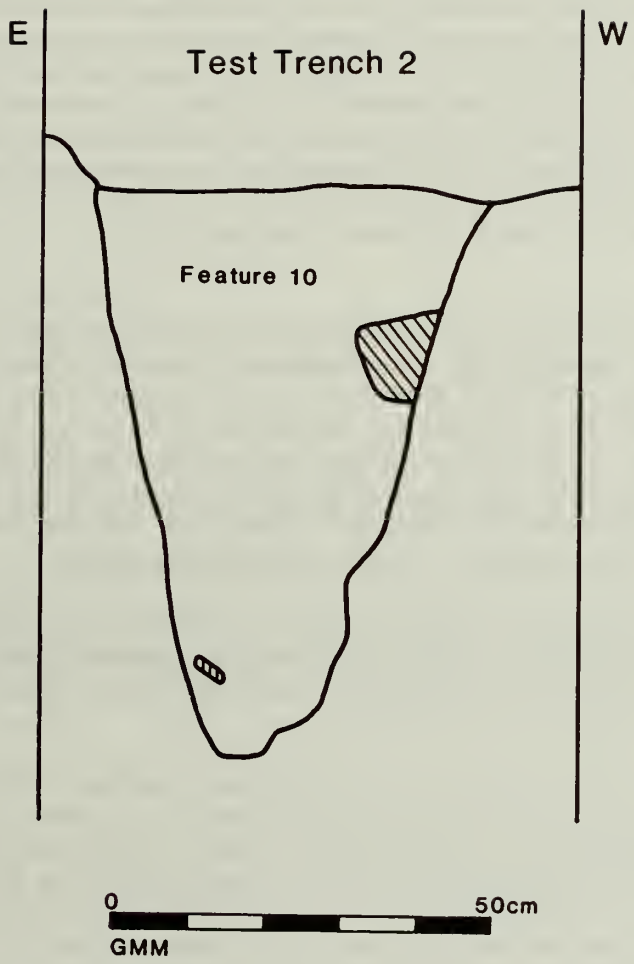


Figure 7-23. Profile drawing of Feature 10, facing south. The northern half of the posthole contained a great deal of rotted wood, presumably the remains of the post.

below), resulting in the highly mixed soil and artifact content of the trench backfill. As excavation progressed, it became clear that the large number of boulders, broken brickbats, and crushed mortar along the northern edge of the feature was probably a segment of a wall foundation.

The wall foundation was of a very crude sort, with rough boulders (as well as a few fragments of dressed slate building stones) seemingly piled haphazardly into a relatively narrow trench and capped with mortar and broken brickbats to form a level bearing surface. Undoubtedly the bricks were either reused or were cast-offs from some other construction effort; further, the foundation must have supported a frame structure rather than a brick one. It simply was too crudely constructed to support the weight of a brick superstructure. Presumably, this foundation formed the base for a frame ell behind the boardinghouse (that the ells behind this boardinghouse block *were* of frame construction is documented by the Sanborn Insurance maps: see Chapter 4). It closely resembles the foundation for the frame woodshed behind the brick ell encountered in Trench 3 (see below). Several similar foundations were discovered during archeological monitoring of construction in Boott Mill #6 (Douglas C. George, personal communication), lending support to the interpretation of this feature as a foundation.

Feature 10

A roughly square post hole with a cone-shaped cross-section (Figure 7-23), Feature 10 had been cut by Feature 7, indicating that the foundation was installed at a later date than the post hole. The post hole contained a great deal of rotted wood in its northeast quadrant; this wood was concentrated in one area of the post hole and reached from the top to the bottom of the feature. While this may have been the remains of the post that had been set in the hole, the wood was so rotten and fragmentary that it in no way resembled an actual post. The fill of Feature 7 contained a large quantity of wood fragments in the vicinity of Feature 10. Whether this resulted from Feature 10 cutting into Feature 7 or truncating it, or both, is not altogether clear.

The fill of Feature 10 was a loosely packed dark greyish brown (Munsell 2.5Y-3/2) sand with light grey (Munsell 2.5Y-7/2) mottling throughout. At its deepest point (which was the area in which the possible post was located), it extended 75 cm below the top of the "subsoil" into which it was cut.

This substratum, a hard-packed, yellow-orange sand, provides a striking contrast to the dark fill of the features cut into it. It does not, however, appear to be sterile; rather, occasional brick chips and nails are embedded fairly deeply within it. It seems likely that this "subsoil" consists of soil excavated for the cellar of the boardinghouse or, more plausibly, the backfill of the installation pit for the well (Feature 2), the edge of which was not within the bounds of our test unit. Further, it is possible that the substratum was deposited as fill during initial mill housing construction; widespread use of fill during site preparation has been documented at the nearby Merrimack Mills complex (Gorman et al. 1985: 44, 46, 48).

Artifacts in the fill of Feature 10 were not numerous. A few corroded nails, some undecorated ironstone, small fragments of brown and purple transfer-printed ironstone, fragments of window glass and pharmaceutical bottle glass, a fragment of a prism or cut glass lamp or chandelier ornament, a fragment of unglazed redware, a pipe bowl fragment, and brick chips were all that were recovered. None of these has proved highly diagnostic in dating the feature. Further, it is difficult to offer conclusions as to the function of the post hole, since one normally assumes that a post hole forms only a part of a fence or structure. It is possible to speculate, however, that this feature may have been a fence post or a support post for a shed or outbuilding, a clothesline post, or even a portion of a protective structure over the well. If further archeology exposed a larger area around the well, it should be possible to reject most if not all of these alternatives in order to arrive at the correct interpretation.

Features 11 and 12

Although neither of these features was excavated during the testing phase of the project, Feature 11, at least, promises to be of considerable interest. Both features appear to be roughly circular backfilled pits, only a portion of which occurred within the bounds of the excavation unit

(see Figure 7-12). Both were cut by Feature 7 and therefore pre-date the foundation. It seems logical to assume, therefore, that both deposits were created before the ell was built behind this boardinghouse, i.e., prior to the 1860s (see Chapter 4).

Feature 11 was filled with a highly mottled grey-brown sand. Although it was not excavated, a single ceramic sherd was removed from the top of the feature. This is a fragment of blue transfer-printed pearlware of a sort that was manufactured in the 1820s. The presence of this type of pottery suggests that the feature pre-dates the boardinghouse era altogether and may perhaps have been deposited during the time when Kirk Boott's mansion stood nearby. The intriguing possibility that this may be a trash pit from Kirk Boott's household should be explored through excavation of the feature in the future.

Feature 12, also not excavated, was distinguished by a fill of light tan sand with orange mottling. No diagnostic artifacts showed up on its surface, so it is impossible to speculate about its date or function.

Feature 13

See description under Feature 3.

Trench 3
Rear of #38 John Street and #40 Amory Street

Test unit 3 was placed behind one of the John Street boardinghouses that had had brick ells; it was intended to encounter the party wall of the connected brick ell used by unit #38 on John Street and by unit #40 on Amory Street. The latter unit was an end tenement located at the rear of the block. The trench successfully straddled the foundation for the brick party wall of the ell and exposed a portion of the stone foundation for the woodshed where it abutted the ell, as well as a portion of the interior of the shed. It did not extend as far as the rear wall of the woodshed that would have faced the alley behind the boardinghouse block Figures 7-24 and 7-25).

The brick foundation of the ell was designated Feature 9; the stone foundation of the woodshed was inadvertently omitted from the feature list and thus never received a feature number. One other possible feature, a soil discoloration in the northwest corner of Trench 3, was designated Feature 14.

Feature 9

This was an L-shaped segment of a brick foundation running east-west through the eastern third of the trench, at which point it turned 90° and headed south (Figure 7-26). The wall was laid in common bond with a white, sandy mortar. It measured approximately 25 cm wide east-west and approximately 31 cm in width north-south; at least 12 courses are extant below its uppermost surviving course.

Excavation did not proceed to the bottom of the foundation. The reason for this was the dense rubble encountered on either side of the foundation, which may be indicative of its function as a party wall. Although it is possible, it would be unlikely for the rubble concentration to be so dense and so deep on either side of an exterior foundation. In fact, there was next to no rubble to the rear of the brick foundation. This may be a result of the manner in which the structure was demolished, however. The foundation exhibited two interesting features: a gap in the brickwork along the east-west portion and a failure to extend to the north at the rear.

The gap, which was as wide as a single brick is long (ca. 20 cm), began three courses below the uppermost course that survives and continued below the extent of excavation (Figure 7-27). It is interpreted as an air vent intended to keep the crawlspace beneath the ell, and the flooring above, relatively dry. The opening thus provides evidence for the floor level of the ell as well as evidence

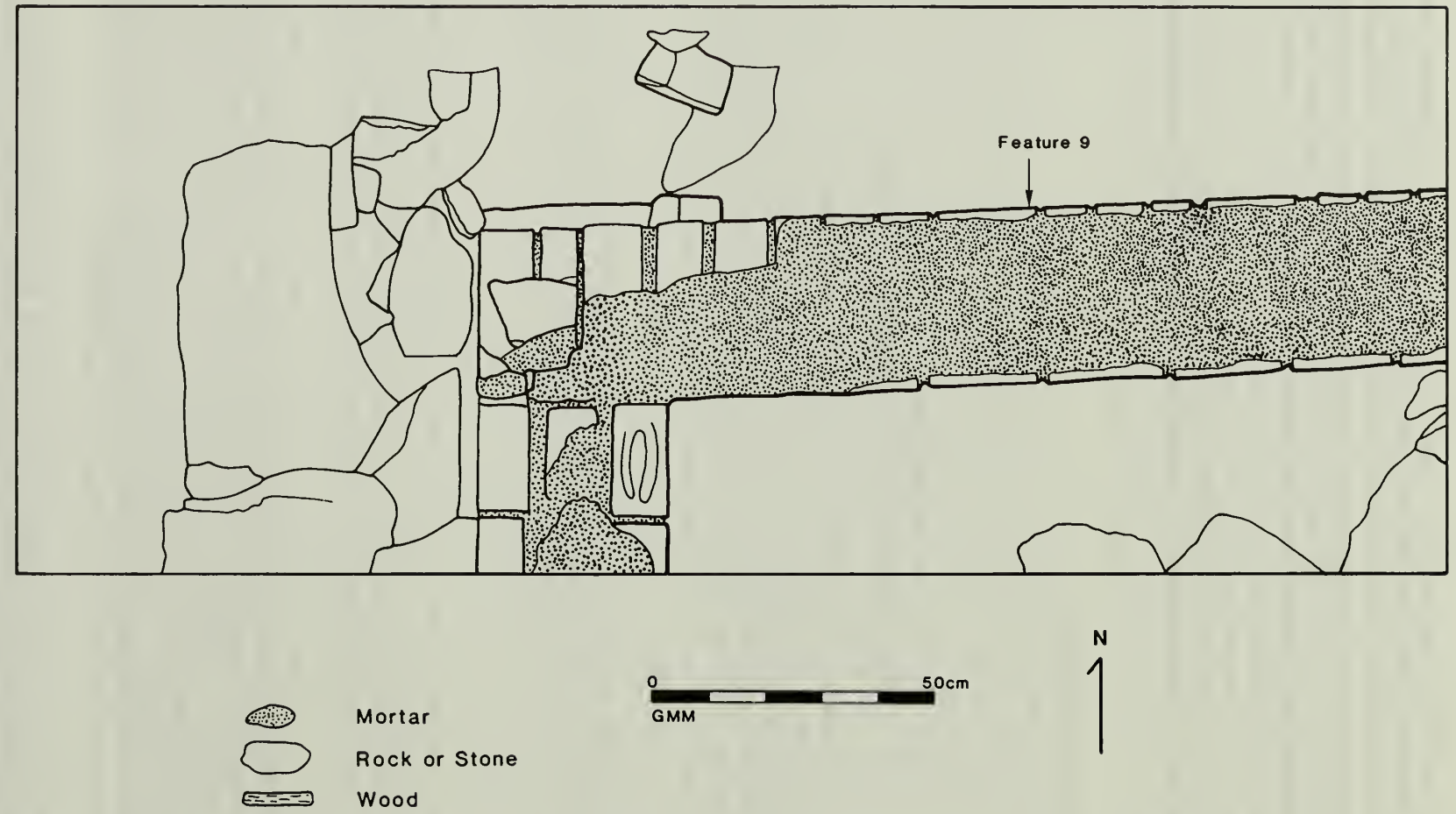


Figure 7-24. Plan of Test Trench #3.

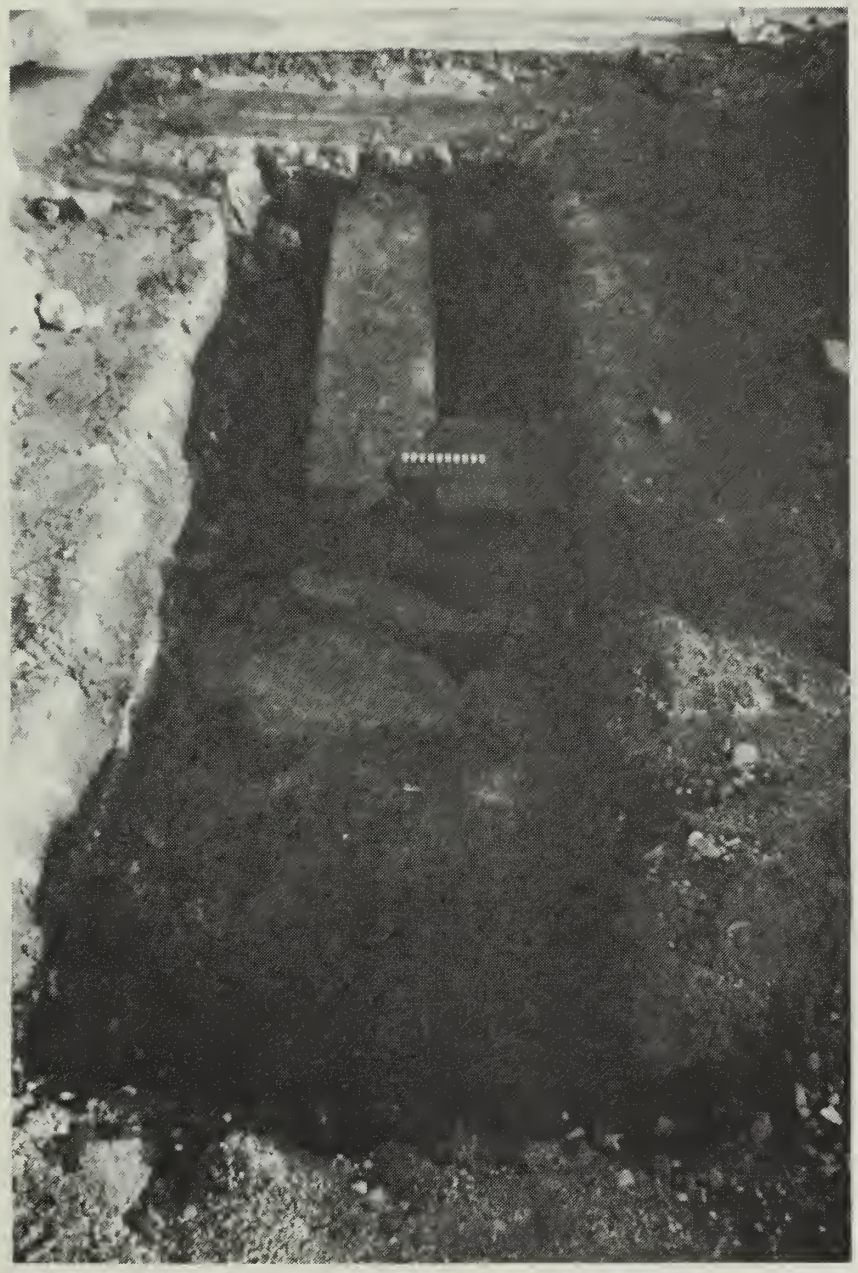


Figure 7-25. Overall photograph of Test Trench #3. Camera faces east.

Figure 7-26. Detail of Test Trench #3 showing Feature 9, a brick foundation for an ell. Camera faces east.

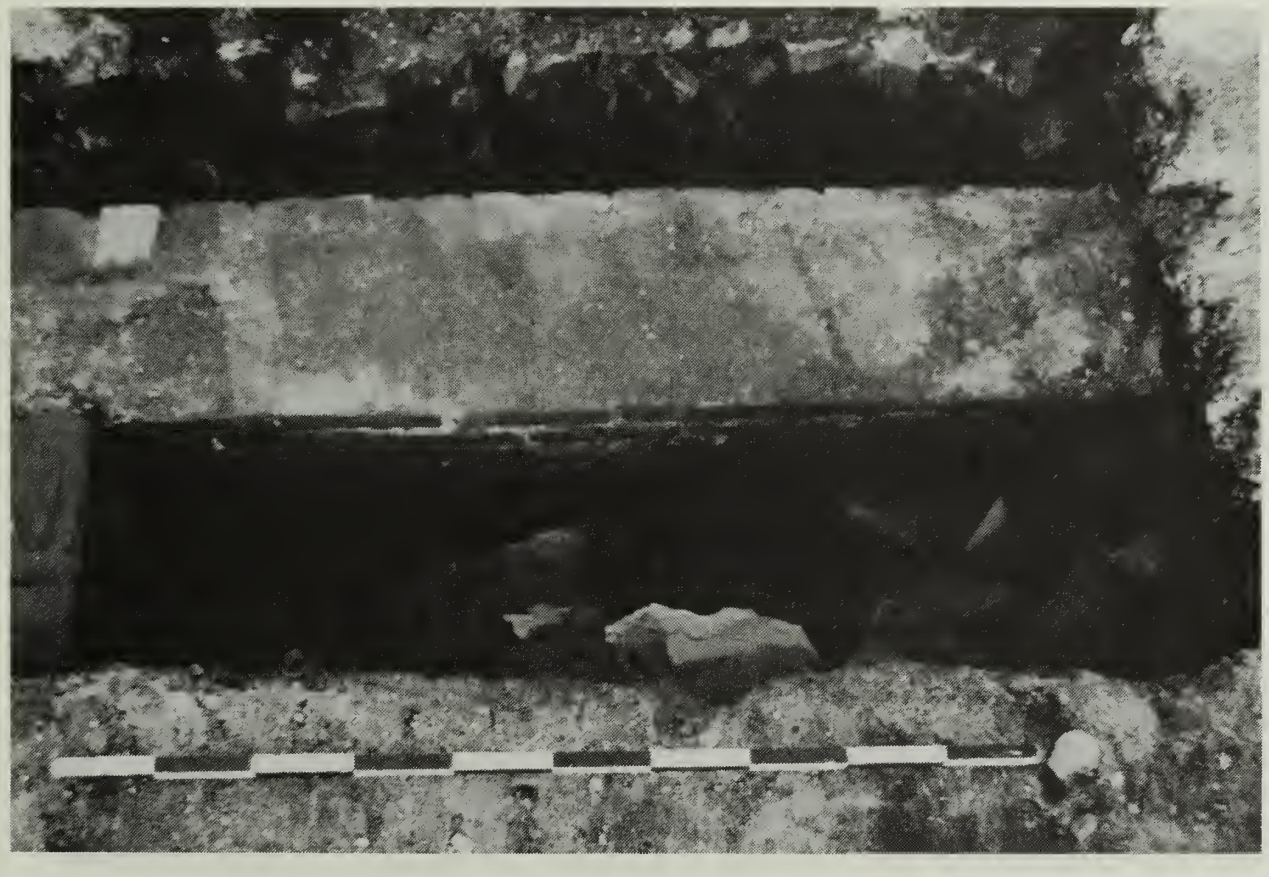


Figure 7-27. Detail of Feature 9 showing the vent hole in the brickwork (in the approximate center of the foundation section, four courses from the top). Camera faces north.

Figure 7-28. Detail of Test Trench #3 showing stone foundation for woodshed abutting Feature 9, the brick ell foundation. Camera faces south.

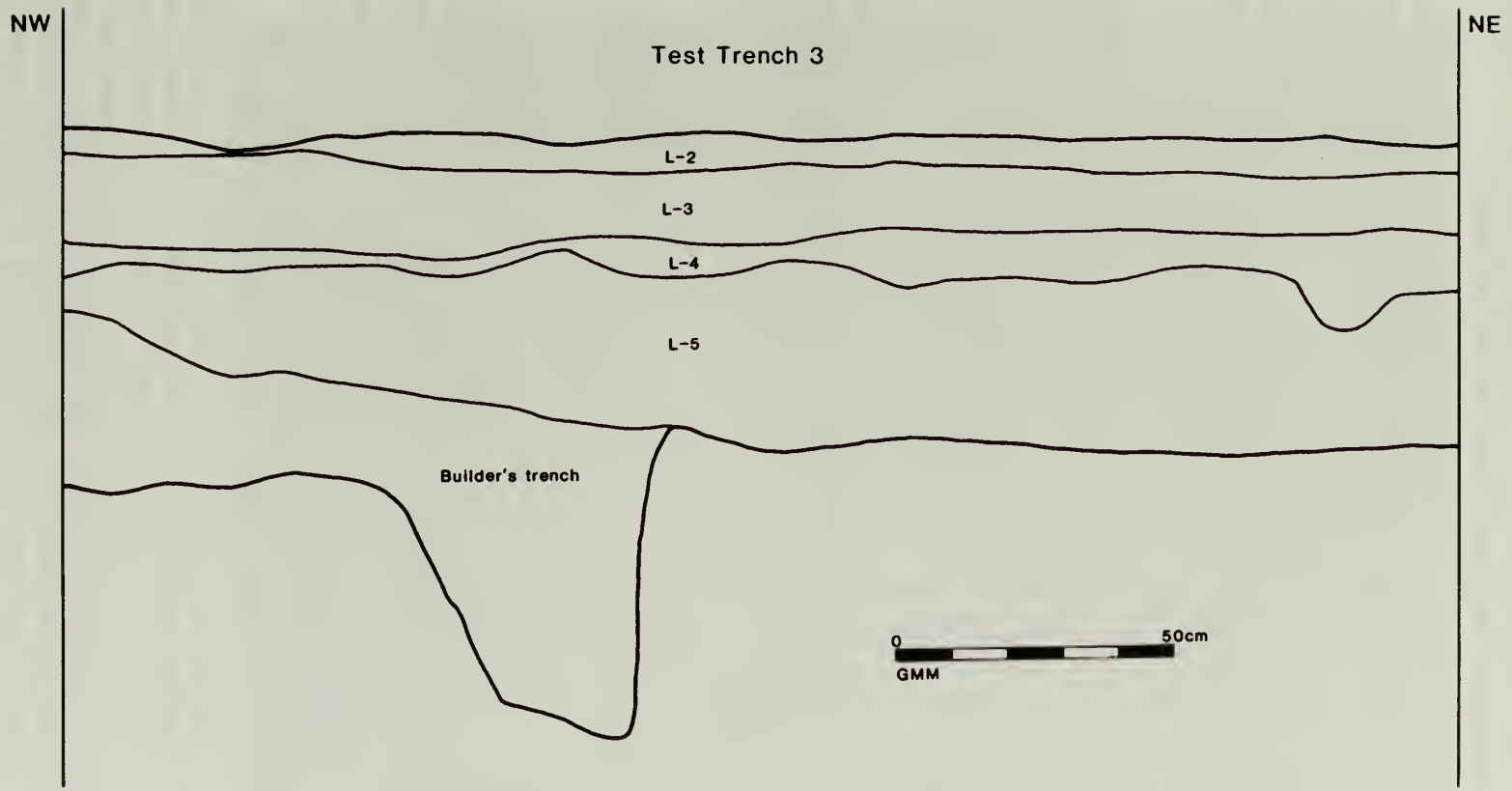


Figure 7-29. North profile, Test Trench #3. The builder's trench to the west was constructed for the foundation of the woodshed.

that there is no cellar beneath the ell. Presumbably, then, the exposed portion of the foundation can be interpreted as being almost all of that remains of this feature.

The fact that there is no foundation extending northward at the rear of the ell (see Figures 7-25 and 7-26) can be interpreted in two ways: either this is really the foundation for the northern edge of the ell and not a party wall, or this is a gap for a doorway. The latter interpretation seems less likely than the first, however, since it is logical to assume that the door that opened into the woodshed would have been at the floor level of the ell rather than below it.

The manner in which the brick foundation abuts but does not connect with the woodshed foundation is indicative of the fact that the brick ell was built after the woodshed was in place, an observation borne out by the Sanborn Insurance maps (see Chapter 4). The stone foundation for the woodshed resembles Feature 7, the foundation located in Trench 2, in that it consists chiefly of boulders placed in a trench, but it is far more substantial (Figure 7-28). The boulders and dressed stone fragments are generally larger than those in the other trench, and small fragments of stone have been used as shims to create a foundation far neater in appearance and far more level than that of Feature 7. Although slightly irregular, the stone foundation averages 50 cm in width; no diagnostic artifacts were found in the small portion of trench fill that was excavated.

Artifacts found in the rubble fill on either side of Feature 9 were very much what one would expect in such a context. Nails, window glass, tarpaper, brickbats and large concentrations of mortar, as well as wood fragments, were most numerous. Other finds included fragments of transfer-printed ironstone, large pieces of undecorated white ironstone dinnerware, including most of a tea cup, faunal remains, corroded metal fragments, and bottle glass. Most of the material was quite recent and apparently dates to the time of the structure's demolition.

Feature 14

This feature was a thin, irregularly shaped lens of dark brown sandy soil containing a large quantity of wood chips. Located in the northwest corner of Trench 3, this feature may represent evidence of the function of the woodshed or may have been deposited at the time that the boardinghouse was razed. No artifacts were found in this deposit, making it difficult to offer any further interpretations about it.

Trench 4
Rear of #41 Amory Street

The placement of Trench 4 was designed to provide evidence of the rear of the woodshed and for the alley behind the tenement unit at #41 Amory Street. It was thought that foundation remains and, possibly, drainage features might be encountered. This area of the site, however, proved to have suffered considerable disturbance, especially when compared to the areas exposed by the other trenches. Rather than well preserved features found directly below the bedding of the parking lot, Trench 4 contained a deep deposit of coal ash and cinders apparently deposited during the use of this lot as a coal yard. Here the coal layer was riddled with masses of corroded iron strapping, perhaps some form of grid used to surface the coal yard at one time.

The degree of disturbance to this portion of the site was further evidenced by the lack of intact features in the excavation unit (Figure 7-30). Sterile subsoil was encountered directly beneath the coal layer throughout most of the trench (see Figure 7-31). Near its western edge, however, a jumbled mass of boulders, broken brickbats, and 19th-century artifacts in a matrix of mottled grey clay and white sand mixed with redeposited subsoil crossed the trench on a north-south axis (Figure 7-32). This was at first thought to be simply another manifestation of disturbance caused by grading or bulldozing and received no feature designation. In light of the rather crude nature of the foundations uncovered in Trench 2 and Trench 3, however, it is possible that this portion of Trench 4 is in fact a much-disturbed foundation trench for the rear of the woodshed. Another possibility is that it represents a badly disturbed drain, although this seems

Figure 7-30. Overall photograph of Test Trench #4. The jumbled boulders in the foreground presumably are the disturbed remains of a woodshed foundation. Camera faces east.

less likely given the rather distinctive nature of the other drainage features encountered elsewhere on the site.

Artifacts recovered from the fill of this disturbed feature included window glass fragments, sherds of plain white ironstone, and white clay pipestems, one of which was marked "GLASGOW." As the latter artifact is very similar to the pipestem marked "DAVIDSON/GLASGOW" that was found in the fill of Feature 7, it may be taken as additional evidence that the feature in Trench 4 was indeed the remains of a crude stone foundation and that it is contemporary with Feature 7 in Trench 2.

Summary

Test excavations in the rear yards of two blocks of Boott Mill boardinghouses have shown clearly that numerous features relating to the boardinghouse era of occupation and perhaps even earlier lie well preserved only a few centimeters below the asphalt surface of a busy parking lot. The features consist of architectural remains such as wall foundations as well as elements of the waste and water management systems for the boardinghouses. Further, the archeological deposits contain bountiful evidence of life in the boardinghouses in the form of plain and fancy dinnerware and utensils, bottles of all sorts, wine glasses and beer mugs, food remains, bits of leather and textiles, hardware, pieces of fireplace equipment, personal items such as buttons, smoking pipes, costume jewelry, marbles, doll fragments, and even fragments of red earthenware flowerpots. These items, studied in their proper context, speak eloquently of the quality of daily life for boardinghouse residents. From such mundane objects we learn of peoples' simple pleasures in leisure pastimes and of their brave attempts to personalize the monotonous and often anonymous environment engendered by mill work and by the boardinghouse system. As such, the simple artifacts found in the refuse from the boardinghouses play counterpoint to the far more substantive remains that are the products of corporate building campaigns and of corporation efforts to provide for the health and well being of its workers.

If, as one 19th-century writer phrased it, the mills and boardinghouses formed merely a huge stage set, a facade or backdrop for the workings of industrial capitalism (Thayer 1845: 15, quoted in Zonderman 1986: 11), it is clear that it was in large measure the mill workers who acted in the drama that took place on its stage. Given how little we know of the lives of these people, the artifacts of daily living provide us with a precious, if fragmentary, script with which we may begin to interpret a very real past that is at once recent and at the same time elusively distant from our own way of life.

Chapter 8

FOODWAYS IN THE LOWELL BOARDINGHOUSES: THE HISTORICAL AND ZOOARCHEOLOGICAL EVIDENCE

by David B. Landon

Introduction

An important component of the rise of the textile industry in Lowell was the corporations' establishment of boardinghouses for their employees. The factories needed workers, and the workers needed a place to eat and sleep.

> East Chelmsford, the rural site that became Lowell, offered little in the way of workers' housing. The new company had to recruit workers from a distance, and since the surrounding town offered few accommodations, it had to build its own housing. (Dublin 1979: 76)

The investment in boardinghouses, while helping to attract workers, also helped the corporations reduce turnover and maintain social control (Dublin 1979: 76-78). The boardinghouse keeper had a focal position in this system. The boardinghouse keepers lived in the buildings, collecting rent, enforcing corporation regulations, preparing meals, and generally overseeing the functioning of the boardinghouse. As a corporation employee, the boardinghouse keeper's livelihood depended on being able to carry out these duties successfully. While their responsibilities to the corporation have been partially explored (Dublin 1979: 78-80), the services provided to the tenants have received little attention. On a day-to-day basis, the most important service provided was the purchase of food and preparation of meals.

The primary purpose of this preliminary discussion of foodways in the Lowell boardinghouses is to develop a framework within which food-related remains recovered archeologically from the Lowell Boarding House Park Site can be interpreted. The discussion and development of this framework will be broken into four major parts. First, the foodways concept as applied by archeologists will be reviewed, and a general approach to examining the food service provided by the boardinghouse keepers will be proposed. Next, some broad transitions in the market system for food during the 19th century will be investigated to provide a background for explaining the food distribution mechanism within Lowell. The focus will then shift more specifically to the boardinghouses, with an examination of historical accounts relating to food. Finally, a relative price structure will be used as a framework for analyzing the faunal remains recovered in test excavations conducted at the Boott Mill boardinghouses.

The Foodways Concept in Historical Archeology

In order to investigate dietary and food-related questions, historical archeologists such as Deetz (1977), Otto (1977), Blanchette (1981), and Graffam (1984) have employed the concept of *foodways*. All of these researchers use Anderson's (1971) definition of foodways as the "whole interrelated system of food conceptualization, procurement, distribution, preservation, preparation, and consumption" (1971: 29); Graffam (1984: 1) adds to this the "discard of garbage and food-related trash." To utilize a foodways perspective in research is to take a holistic look at the entire spectrum of food-related activities. By including the discard of food-related trash, Graffam adds another dimension to the relevance of this perspective for archeology.

The specific approach Graffam uses is applicable to research on foodways in the Lowell boardinghouses. Using archeological information from a nineteenth-century residence of two

elderly women in Portsmouth, New Hampshire, he explores how economic constraints influenced different aspects of their foodways, such as the procurement of certain types of food based on the need to economize in making food purchases.

The applicability of this type of approach derives from the fact that the boardinghouse keepers were themselves subject to economic pressures when making food-related decisions. This can best be seen by looking at the boardinghouse meals as an economic activity. A service was being provided to the mill operatives by the boardinghouse keepers in return for the payment of board. The boardinghouse keepers were, above all else, working to support themselves and their dependents by attempting to provide acceptable food to their boarders while maximizing their own earnings. In her 1841 book, *A Treatise on Domestic Economy*, Beecher describes the actions of a boardinghouse keeper in order to provide a model for other women.

> Every evening, before retiring, she made an account of the expenses of the day; and this usually occupied her not more than fifteen minutes at a time. On each Saturday, she took an inventory of the stores on hand, and of the daily expenses, and also of what was due to her; and then made an exact estimate of her expenditures and profits. This, after the first two of three weeks, never took more than an hour, at the close of the week. Thus, by a very little time, regularly devoted to this object, she knew, accurately, her income, expenditures, and profits. (Beecher 1841: 177)

This points out quite clearly the economic nature of the boardinghouse keepers' activities.

The procurement choices of the boardinghouse keepers as they supplied food service must be viewed as selective purchases from the wide variety of goods and services offered by the market system in Lowell. What might otherwise be considered non-market system activities, such as the keeping of domestic animals, or the maintenance of a garden, can still be viewed in this context. The scale of the boardinghouse makes it unlikely that any significant portion of the food was acquired in a manner not at least partially supported by the market. Hunting requires weapons and ammunition, a garden must be started with seeds, and domestic animals must be fenced in and fed.

While economic concerns would clearly influence food-procurement decisions, they also impacted many other aspects of boardinghouse foodways. This will become clearer when the focus shifts more specifically to historical accounts of boardinghouse diets. First, however, it is necessary to discuss some broad transitions taking place during the 19th century. While it is beyond the scope of this chapter to do this in any great detail, a cursory examination of these trends helps to elucidate the potential impacts on Lowell boardinghouse foodways.

Trends in 19th-Century Food Production and Distribution

Not surprisingly, many of the changes that impacted the food-supplying industries reflect more general trends of the industrial revolution and parallel developments represented in Lowell by the growth of the textile industry. One of these changes is the growth of urban populations. The population of Lowell in 1855 was approximately five times the population of 1830, as people flocked to the city to take advantage of the textile industry's demand for labor (Appleton 1858: 34). Naturally, this caused a dramatic increase in the demand for food and food-related products. With the rise of factories in Massachusetts came a similar increase in commercial agriculture (Useem 1942: 32).

At the same time, rapid infrastructure improvements created an ever-expanding market system.

> By 1825 a widespead web of turnpikes and canals, . . . had

> substantially reduced transportation costs for the back country, made travel more swift and comfortable, and the exchange of goods much easier. For interior towns they opened new markets for farm produce . . . . If to farmers in interior New England canal and turnpike traffic was a boon, their effect was minor compared to the revolution that resulted from the coming of the railroad. (Russell 1976: 327, 332)

New England farmers gained greater access to markets, and as did more distant food producers. Even before the coming of the railroad, the Midwest meat-packing industry was marketing its products in New England (Walsh 1977: 751). By 1855, "Massachusetts had lost the preserved pork market . . ." (Rothenberg 1979: 1001). The situation was much the same with beef. By the early 1870s, beef from Texas and the Midwest was appearing in Boston markets (Smith and Bridges 1982; Schlebecker 1975: 171). By 1886, most of the beef purchased in Massachusetts cities was from the Midwest (Atwater 1886: 259).

In the city of Lowell, the Boston-Lowell Railroad, which opened in 1835, was a major infrastructure addition. Apart from the fact that it helped the textile industry to receive its raw materials and to ship its products to market, it also provided relatively inexpensive transportation for a wide range of other products to move both in and out of Lowell. In 1850, the Cambridge stock market was receiving on average between 15 and 20 railroad cars of domestic stock per week (*New England Farmer* 1850). Other food products were undoubtedly coming into Lowell in this manner. Firms in Lowell were advertising a wide range of products originating outside of Massachusetts, including foreign fruit, West Indies goods, and flour from New York mills (*Lowell Directory* 1851, 1853). The most conclusive evidence for Lowell's participation in a larger market system comes from a surviving sheet from the account book of Timothy Porter and Co (a wholesale food-distribution firm). It dates to 1856 and describes the shipment of flour and barrelled beef to Galveston and Austin, Texas, New Orleans, Louisiana, and Mobile, Alabama. Admittedly, these are just a few examples of the impact of infrastructure improvements, but they do suggest expanding market networks for food products and help to elucidate Lowell's position as part of this larger market system.

In addition to increasing urbanization and infrastructure improvements, technological progress also had a dramatic effect on food-supplying industries, which impacted many parts of the foodways system, including the preservation and conceptualization of food. Developments in the canning industry support both of these ideas. Canning first began on a small scale in Boston in 1819, with canned seafood (Schlebecker 1975: 452-55).

While the impact canning had on food preservation is fairly obvious, it is harder to understand the changes it caused in food conceptualization. The canning of food was perhaps seen as increasing the portability of discrete quantities of a wider variety of foods, as implied by the description of a textile industry lunch in the early 20th century: "In the corner was a great big, long sink . . . . There was a steampipe going into that water, so it was boiling hot. We'd bring soup, cans of corn, cans of tomatoes, and heat them in there for our meal" (Hareven 1978: 184).

The changes caused in food-supplying activities can be summarized in the following manner. Increases in urban population boosted the demand for food and helped increase commercially-oriented farming. Infrastructure improvements led to easier market access for New England farmers and more distant food producers, resulting in an expanded market system for bringing food products into Lowell. At the same time, technological improvements, such as canning, were impacting other aspects of the foodways system.

Focusing more closely on Lowell itself, it is possible to get an idea of the activities and functioning of the market system within the city. The physical situation of grocers' shops in the city is not too clear, but it seems as though some early attempts at centralization were made: "In 1837 a large Market-house was completed. The building is of brick, 150 feet long, forty-five feet wide, three stories high, and contains twenty-two stalls for meat, vegetables, and fish" (Miles 1846: 42). In addition to the centralized market area, there were undoubtedly other establishments

providing food throughout the city. By 1851, there was a minimum of 60 businesses selling food in Lowell (*Lowell Directory* 1851).

One question that remains unanswered is to what extent, if any, the corporations or various employees had any vested interest in specific food-provisioning businesses. An account from nearby Fall River, Massachusetts, suggests that this is a legitimate possibility.

> According to the statements of several Fall River operatives there are no corporation stores, though they say a number of the overseers and clerks have friends who are interested in the various stores, and to whom they recommend the help, in many cases getting a commission on all trade they influence; and a new man thinking that he is currying favor with the overseer, will trade there. . . . A relative of a large mill owner has a store at which, one of the operatives said, the mill hands are told to trade. (Wright and Pidgin 1882: 237)

While it remains unclear whether practices such as these described for Fall River were taking place in Lowell, it is an issue which would merit further investigation.

The advertisements of Lowell firms offer information about the range of products available. Some of these advertisements are, in fact, quite specific. Examples include "A. Prentiss--Bread, Cake, and Pastry, Pies and Cake of Every Description" (*Lowell Directory* 1851: 15); "Farnsworth and Stuart, Dealers in Beef, Pork, Bacon, Lard, Sausages, Smoked Beef, Tongues, Veal, Lamb, Mutton, Potatoes, Apples, Butter, Eggs, Beans, and Vegetables of all kinds" (*Lowell Directory* 1851: 39); "S. & E. Adams, Dealers in Tripe, Pigs' Feet, Neatsfoot Oil, and Tallow" (*Lowell Directory* 1851: 40); and "Sargent and Cotton Fish Market--Receive Daily Halibut, Cod, Haddock, Mackeral, Shad, Lobsters, Oysters" (*Lowell Directory* 1861: 22). This is just a sample, but it is representative of the wide range of products available for purchase.

A large percentage of the firms, it appears, were selling at both wholesale and retail. There is some evidence to indicate that the boardinghouse keepers were buying at wholesale or near-wholesale prices. Obviously, to feed a large number of people this would be both practical and economical. A short description of boardinghouse food procurement from an interview with a boardinghouse resident in Manchester, New Hampshire, suggests purchases of wholesale quantities: "He used to get the butter once a week, big tubs of butter. That's heavy. And big boxes of crackers--it was the whole case--and sugar by the barrel" (Hareven 1978: 55).

More direct evidence for Lowell comes from the account book of H. C. Magoon, a grocer in Lowell. On November 7, 1850, Bradbury Brown, a boardinghouse keeper, bought 30 bushels of potatoes for 75 cents a bushel. On December 7, 1850, potatoes were selling wholesale in Boston for between 75¢ and $1.00 a bushel (*New England Farmer* 1850). In both price and quantity, Brown seems to have been buying his produce wholesale. Although this was not necessarily the situation for all boardinghouse keepers, it does seem to have been an option that helps clarify the opportunities for economizing in the procurement of food.

Information on some of the mechanisms of the Lowell market system can also be derived from the advertisements. A number of businesses advertised free delivery within the city (*Lowell Directory* 1851). This coincides with oral testimony of a Boott Mill boardinghouse resident's description of the keeper's food purchases: "She used to go and do her store [shopping], and then they'd deliver it in big boxes for the house" (Bond 1986: 18). It is possible that food provisioners in Lowell were also picking up goods from local farms. As Russell (1976: 355) describes for New England in general, "Within reach of populated centers a market wagon might make rounds of the neighborhood collecting butter and cheese, and along with these, poultry and eggs, for which cash returns were made the next week."

In 1851, one grocer, George M. Dewey, referred to himself as a "commission merchant," stating "orders for the sale of country produce solicited" (*Lowell Directory* 1851: 16). This

implies that grocers were acting as middlemen for the farmers in the surrounding area. While Dewey refers only to country produce, it would not be unreasonable to envision a similar situation with regard to domestic stock and other locally-produced food products. There is no direct evidence for this, but there is some valuable information about stock raising and fishing in Lowell to be found in the 1888 Minutes of the Lowell Board of Health..

In 1888, the Lowell Board of Health visited 23 farms to ascertain whether the farmers were feeding swill to their cattle. The livestock holdings on the farms they visited averaged 19 cows and 16 pigs each (LBH 1871-1888). The shipment of domestic stock from Lowell to Boston has already been discussed. It is only logical to assume that a certain amount of the stock raised in the Lowell area never went to Boston, but served the demand of the local population for beef and dairy products. The firms in Lowell also provided services for people who raised a small amount of stock for private consumption. As the S. E. Adams Company advertised, "orders for the butchering of hogs attended to at short notice" (*Lowell Directory* 1851: 40).

Fishing was another food-procurement activity that took place in Lowell. Water power was not the only resource available from the Merrimack River:

> Rev. Mr. Allen, who wrote in 1820 while the fisheries were still uninterrupted by pollution of the streams and the building of impassable dams, gives a specific estimate of the annual catch. "The quantity of salmon, shad, and alewives caught in Chelmsford annually," he wrote, "may be computed at about twenty-five hundred barrels, besides a large quantity of fish of less value" (Coburn 1920: 63).

As with domestic stock, these fish were probably transported out of Lowell in addition to being sold to the city's residents, who may also have procured fish in small quantities through their own efforts.

The general functioning of the market system for food in Lowell can be summarized in the following manner. From both centralized and more dispersed locations in Lowell, a wide variety of both domestic and imported foodstuffs was offered for sale. Both private and commercial agricultural production took place, with produce ending up in Lowell and outside of Lowell. The merchants in Lowell were providing services to agriculturalists and others, such as slaughtering and delivery of purchases, in addition to acting as middlemen for locally-produced or procured foods.

Food Preparation in the Boardinghouses

It is appropriate at this time to focus more closely upon the foodways within the Lowell boardinghouses. At the outset it must be stated that there is no evidence that the food served in the boardinghouses was at any point considered unacceptable by the boarders. Of the various complaints of the operatives and critics of the Lowell factory system, the quality of the food does not seems to have been an issue. While the role of the boardinghouse keepers in enforcing morality was emphasized during the period as a positive aspect of boardinghouse life, again little was said about the quality of the food. Yet on a day-to-day basis, preparation of food was the single-most significant function of the boardinghouse keepers, and it was undeniably the greatest service they provided. As neither critics nor supporters of the system made any real issue of the food, it seems likely that it was neither particularly good nor particularly bad. Although he wrote as an apologist for the mills, Henry A. Miles (1846: 72) was probably not untruthful when he wrote that the "food that is served in these houses is of substantial and wholesome kind, is neatly served, and in sufficient abundance."

A certain level of quality was to some extent forced by the economic nature of the service the boardinghouse keepers provided. The livelihood of the keepers depended on their ability to attract

boarders. As Miles (1846: 72) described it, "Operatives are under no compulsion to board in one tenement rather than another; it is for the interest of the boardinghouse keeper, therefore, to have her bill of fare attractive." This is somewhat misleading, however, as the low rents and high-quality facilities of the boardinghouses presumably would have made them attractive even if the food was well below par. Supplemental income, however, could be made by a boardinghouse keeper who provided high enough quality service to entice people who were not actually living in his/her boardinghouse to eat there. An operative from Manchester, New Hampshire, described the situation:

> People in the street, people that worked in stores, used to go to boardinghouses to eat along with mill workers. They put on family-style meals; you were glad to get a fork in your hand to reach for something. I can remember going to one of the boardinghouses; at 50¢ for a dinner, you could have all you wanted (Hareven 1978: 157-159).

A similar situation prevailed in Lowell, as recalled by a Boott Mill boardinghouse resident, "Some of 'em didn't even live there, but they boarded there. They paid their board and they lived someplace else" (Bond 1986: 13). The proximity of many of the boardinghouses to the mills and the relatively inexpensive meals that the boardinghouse keepers could serve undoubtedly added to the desirability of eating at the boardinghouses. Nonetheless, maintaining a level of consistency and quality helped the boardinghouse keepers to maximize their own livelihood.

Some descriptions of meals from the Amoskeag Company boardinghouses in Manchester, New Hampshire, and boardinghouses in Lawrence, Massachusetts, tell of the diet of the operatives. While not directly reflective of the situation in Lowell, the parallels are strong enough to suggest some similarities. The keepers of the boardinghouses in Manchester and Lawrence would have had access to similar market resources and would have been subject to similar economic constraints. Dublin points out the potential for parallels between Lowell and other textile oriented cities: "The evidence provides assurance that in examining the experiences of the women workers in the Lowell mills we are also addressing broader trends and issues relevant to workingwomen in other factory towns of New England in this period" (Dublin 1979: 11). More specifically, "...systems of housing...adopted by the Lowell firms became the standards for much of New England" (Dublin 1979: 9; see also Chapter 4 *infra*). Examining meal descriptions from other textile cities is therefore a legitimate way to gain some insight into boardinghouse food service in general.

Mary Dancause recalls the meals her mother-in-law prepared in a boardinghouse in Manchester.

> My mother-in-law's cooking was good; every day it was something different. One day it was pork, another it was beef, another it was chicken. Then come a holiday, it was her turkey. They used to make their own pastry, too. They had some bread from the bakeries in the morning. That was for toast. Then they'd have the homemade bread for noontime and supper. And soup--they made soup. Once a week, they made those flapjacks in the morning. I think she used to make fifteen, sixteen pies on Friday. She made dessert all the time. She had a bunch of bananas on the table at night. They also made their own piccalilli (Hareven 1978: 54).

A description from a slightly different perspective is given by T. M. Young, who recorded his observations in 1903.

> Breakfast, from 5.30 to 6.30, always consists of porridge and milk, two kinds of hot meat, baked potatoes, hot rolls and butter, tea or coffee, and condiments.
> Dinner, from 11.30 to 12.30: Soup; three kinds of hot meat; potatoes,

> tomatoes, corn on the cob, or other vegetables; pastry, and tea or coffee. Eight bushels of vegetables are usually needed for one meal, and the housekeeper says that to-day fifty-three tins of marrowfat peas were used at dinner.
> Supper: Tea or coffee, bread and butter, cold meats, jam and jellies, and an iced sweet-cake something like a jam sandwich. Sometimes hot dishes are substituted for the cold meat. Tonight, for instance, there is to be "clam chowder," a delicacy in high favour with Americans of all classes (Hareven 1982: 25).

Several interesting insights can be gained from these two accounts. Dancause was obviously recalling facts relating to the production side of meals, while Young was recording what was served. It should also be noted that the quantities Young details for vegetables are based on serving a meal to 150 people and should not be considered representative of the majority of boardinghouses, many of which were undoubtedly operating on a smaller scale. Several similarities are clear and will be addressed below.

Both accounts seem to indicate the important role of meat in the diet, and both also mention soup as a daily part of the menu. Young's observations on the variety and quantity of baked goods are paralleled by Dancause's recollections of the baking of pastries, pies, and bread. Home baking would be an economic measure. As a contemporary guide for women states, "Make your bread and cake. Some people think it is just as cheap to buy of the confectioner; but it is not half as cheap" (Child 1832: 9). Soup would have been a practical and economical way to feed large numbers of people. A particular advantage of soup is that leftovers, food-preparation scraps, and even bones can be used. Describing this economical aspect of soup, Beecher and Stowe (1869: 183) write, "The toughest cartilage, and even the bones, being first cracked, are here made to give forth their hidden virtues, and to rise in delicate and appetizing forms."

The importance of meat in the diet, as suggested by these two accounts from Manchester, is substantiated by an 1833 description of meals in Lowell, ". . . meat was a part of every meal in America at that time, breakfast, dinner, and supper providing approximately the same menu" (Josephson 1949: 68). What seems to be implied here is that there was not much of a difference in conceptualization of what was appropriate food for a specific meal. This lack of conceptual differentiation in meals is further supported by menu information from Lawrence. The basic menus for seven corporations' boardinghouses are given, and two of these describe supper as "about the same as breakfast" (Oliver and McNeill 1872: 420).

The menu information from Lawrence also offers additional insight into economizing measures. Oliver and McNeill (1872: 419) wrote of the Arlington Corporation's boardinghouses: "Nothing is lost, as what is left from one meal is warmed up for the next." Soup has already been suggested as a possible use for leftovers. Home economics books of the 19th century also include hashes and mince meats as uses of table scraps (Child 1841: 17; Beecher and Stowe 1869: 184). This coincides nicely with the menu of the Everett Corporation boardinghouses, which served for breakfast "three days a week either meat or fish-hash" (Oliver and McNeill 1872: 420). Feeding a large number of people while trying to economize, the boardinghouse keepers probably let as little food go to waste as was possible.

While the examples from Manchester and Lawrence do offer some initial insight into the general pattern of boardinghouse foodways, additional information that helps to expand the pattern exists for Lowell. Two short descriptive accounts span the time the boardinghouses were in operation. A visitor to the city of Lowell in 1833 recounts his impressions of the boardinghouse meals: "The diet called for fresh meat at least twice a week, but whether fresh or cured, meat was a part of every meal..." (Josephson 1949: 68). The use of salmon as a regular part of the diet relates back to the importance of fishing as a food-procurement activity taking place in Lowell, as discussed by Rev. Allen. By saying that the boardinghouse residents were "obliged" to eat salmon only once a week, he implies that it was not a preferred food. Yet, by 1870, fresh salmon was the most costly meat in Massachusetts (Graffam 1984: 23). As the Merrimack became increasingly

polluted and impassable, the amount of locally-procured fish in the boardinghouse diet probably decreased as this once-accessible resource became more expensive. Further, Josephson's account highlights the importance of cured meats as part of the menu. In the foodways context, this relates most directly to the question of preservation. Cured meats would be easier to keep and less subject to spoilage.

Recalling the Boott Mill boardinghouse meals of the early 20th century, Blanche Graham reported that:

> In the mornin' you had bacon and eggs and all that stuff. In was good food! Oh yea, if you felt like toast, French toast, or just plain toast, or oatmeal, then she had it. If you wanted oatmeal, she'd give you a plate of oatmeal. If you wanted bacon and eggs you got bacon and eggs. . .. And then at dinner time she'd have maybe a big corn beef and cabbage dinner. Or she'd have somethin' else. And at supper, well ya' had a light supper. She'd warm it up and give it to ya' (Bond 1986: 14).

One thing that stands out in this commentary is how typical the breakfast foods seem by modern standards. This is interesting because it suggests that the lack of conceptual differentiation in appropriate foods for a specific meal (discussed previously) had disappeared by the early 20th century. Although this change is only indirectly visible in these various meal descriptions, it does seem to point to a significant diachronic alteration in meal conceptualization. The dinner foods seems consistent with ideas already mentioned, such as the importance of cured meat in the diet. While most of this chapter has so far focused on the meat component of the diet, Graham mentions cabbage as part of the dinner. This gives a clue to the importance of vegetables included in the meals, a subject deserving of further attention.

One way to accomplish this is to examine in more detail the account book of H. C. Magoon, the Lowell grocer. The account book covers the period from November, 1850 through the beginning of 1852. Magoon dealt primarily in fruit, vegetables, eggs, and butter. He sold to Lowell residents in a number of occupations on monthly account. Of his customers, three could be identified as boardinghouse keepers. They were Bradbury Brown, #4 Massachusetts Corporation; Nicholas Blaisdell, 6 Massachusetts Avenue; and Caroline Duesbury, 113 Merrimack Street. By looking at these three accounts, some aspects of the boardinghouse foodways can be further clarified.

The indications that this account book gives of wholesale quantity and price purchases have already been mentioned. The units in which various foods were purchased can also be seen. Standard American dry capacity units were used for most fruit and vegetable purchases. Cheese, butter, and dried apples were sold by the pound. Butter was also purchased by the tub. A tub of butter weighed between 45 and 48 pounds and when purchased in this manner was discounted between one and three cents per pound. Vegetables were never purchased in the quantities recorded by Young for Manchester, suggesting smaller-scale meal preparation in these Lowell boardinghouses, or a lesser emphasis on vegetables in the diet (note--vegetables in this context are taken to mean vegetables other than potatoes, which were purchased in quantity). In fact, all three of these accounts are similar in their almost total lack of vegetable purchases.

In the eight months Brown made purchases from Magoon, the only vegetables he purchased (excluding potatoes) were three cabbages. Duesbury and Blaisdell bought slightly more vegetables than Brown, but the small quantities stand out in contrast to their other purchases. It is possible that they were all buying vegetables elsewhere. Magoon was selling a wide variety of vegetables at seemingly competitive prices, however, and all three of these boardinghouse keepers were selectively buying small quantities of various types of vegetables. The primary types of goods these people were purchasing from Magoon were potatoes, butter, eggs, apples, berries (including cherries), currants and, to a lesser extent, cheese. Though not conclusive, the pattern of purchases represented here is probably generally indicative of the types of fruit and produce that were being emphasized in boardinghouse meals; further, Magoon's customers seem to have used him primarily

as a source of bulk foods that could, if necessary, be stored for relatively long periods of time. The fact that perishable vegetables were purchased only in small quantities underscores this dominant pattern. What is suggested by this evidence and by the quote from Young, cited above, of a dinner that included 53 tins [cans] of peas is that a high premium was placed upon vegetables that would not go bad. These could either be stored in cool, dry places such as cellars or pantries or were already in a preserved state (e.g., dried, canned, etc.). Hence food preservation, especially canning, is seen as having had a strong influence on the household economy of the boardinghouses. What is more, use of canned vegetables would have cut down on preparation time tremendously.

Undoubtedly the best foodways information can be found in the three extant Lowell boardinghouse dietaries (Figure 8-1, a-c). In 1886, as part of the annual report of the Massachusetts Bureau of Statistics of Labor, a study was prepared titled "Food Consumption: Qualities, Costs, and Nutrients of Food Materials" (Atwater 1886). The purpose of this study was to determine the nutritional value of the food laboring people were eating relative to the prices being paid for it. Part of this food-consumption study focused on boardinghouses. The keepers were asked to detail the quantities and prices of all the food purchased for an entire month. As three of the boardinghouses studied were in Lowell, the dietaries provide a wealth of information directly relevant to this analysis.

Perhaps the most interesting aspect of the dietaries is the consistent pattern they present of the relative importance of different types of products. Beef was by far the most common meat, followed by pork, fish, and finally, veal and lamb. By summing the quantities recorded on the three dietaries (see Table 8-1), a ratio of 9.88:3.87:2.38:1 can be derived for beef:pork:fish:veal & lamb. Looking individually at the different meats provides more information. Roast and corned beef predominate, followed by steak. Smaller quantities of stew beef, tongue, and tripe were also purchased. Ham and pork roast were the most frequent types of pork used, followed by salt pork. Cod and haddock were the primary fish in the diet, supplemented by mackerel and halibut. Only one of these three dietaries lists veal and lamb, and only in moderate quantities. None of the three make any reference to mutton or poultry as part of the month's purchases.

It is remarkable how well the pattern of purchases for dairy products, fruit, and vegetables implied by Magoon's account book seems to have continued throughout the century. A similar pattern is clearly shown in the dietaries (Table 8-1; Figure 8-1, a-c). The combined quantity of potatoes from these three boardinghouses is more than three times the total quantity of all the other vegetables put together. Beans, cabbages, turnips, squash, and beets were other commonly-used vegetables, while onions, tomatoes, peas, and rice were present only in small amounts. Apples were the major source of fruit; almost negligible quantities of raisins and currants were the only other fruits recorded.

The single largest purchase of these three boardinghouses was milk. Although milk was not being supplied by Magoon, the purchasing pattern of the other dairy products matches quite well. Some of the milk was probably being drunk, but 9,000 pounds of milk would be enough for 16 ounces of milk per person, per day. Consumption of milk on this scale would be possible if milk were the primary beverage. None of the meal descriptions that list beverages, however, includes milk. Clearly a significant portion of this milk must have been used for preparing other dishes. Nineteenth-century cookbooks offer some clues in this regard. Lydia Child (1832: 61-66) gives 15 recipes for puddings and custards, all (with the exception of one) of which have milk as a primary or important ingredient. The quantities of flour, sugar, molasses, and dairy products suggest that other baked goods such as breads, pies, and cakes were being prepared by the boardinghouse keepers. Although advertisements show that these products were available commercially, none of the dietaries contains references to baked goods prepared outside of the boardinghouses, except for crackers. The economic advantage of home baking was certainly something the boardinghouse keepers realized.

Dietary Number, A 1.

Description: **Boarding-house in Lowell, Mass., of 77 persons, 66 males and 11 females. Boarders, mill operatives. Time, one month. Estimated as equivalent in demands for nutrients to 75 laboring men at moderate work for 30 days, or 1 man for 2,250 days.**

ANALYSIS.

Food-Materials.				Nutrients.		
Kinds.	Prices per lb.	Quantities.	Costs.	Protein.	Fats.	Carbohydrates.
	cents.	lbs.		lbs.	lbs.	lbs.
Beef, roast,	10	400	$40 00	60.4	79.9	–
Beef steak,	14	272	38 08	39.4	42.4	–
Beef, corned,	7	350	24 50	40.3	99.8	–
Beef tongue,	10	62	6 20	9.2	9.5	–
Beef stew,	5	167	8 35	23.4	52.3	–
Beef, tripe,	6	20	1 20	4.2	0.2	–
Pork, roast,	10	150	15 00	17.1	54.3	–
Ham,	11	160	17 60	23.4	54.9	–
Salt pork,	10	70	7 00	2.0	53.6	–
Lard,	8	260	20 80	–	257.4	–
Haddock,	7	168	11 76	13.9	0.2	–
Halibut,	12	50	6 00	7.6	2.1	–
Mackerel,	3	40	1 20	4.0	1.6	–
Salt fish (cod),	4½	50	2 25	8.0	0.2	–
Total meats, fish, etc.,		2,219	$199 94	252.9	708.4	–
Milk,	2	3,024	$60 48	102.8	111.9	145.2
Cheese,	11	63.5	6 98	17.2	22.5	1.5
Butter,	22 and 10	291	54 54	2.9	254.6	1.5
Eggs,	14	107	14 82	12.4	10.9	0.6
Total dairy products and eggs,		3,485.5	$136 82	135.3	399.9	148.8
Flour,	3	1,568	$47 04	174.0	17.2	1,182.3
Sugar,	7½	600	45 00	–	–	580.2
Molasses,	4½	99	4 50	–	–	70.3
Beans,	3	124	3 74	28.8	2.6	66.6
Rice,	8	25	2 00	1.9	0.1	19.9
Oatmeal,	4	25	1 00	3.8	1.8	16.8
Potatoes,	1	2,520	25 20	47.9	5.0	463.7
Squash,	1½	250	3 75	1.3	0.3	13.3
Onions,	2	28	50	0.3	–	2.0
Beets,	5-9	190	50	1.6	0.1	9.0
Turnips,	5-6	120	1 00	1.1	0.2	6.1
Tomatoes,	5-6	120	1 00	1.6	0.4	5.4
Apples,	1⅔	300	5 00	0.9	–	32.7
Raisins,	12½	24	3 00	0.6	0.1	15.1
Currants,	10	15	1 50	0.3	–	9.5
Corn starch,	9	12	1 08	–	–	11.0
Crackers,	5	48	2 40	5.1	4.8	34.0
Total vegetable food,		5,266	$148 21	269.2	32.6	2,537.9
Total animal food,		5,704.5	336 76	398.2	1,108.3	148.8
Total food,		11,670.5	$484 97	657.4	1,140.9	2,686.7
Meats, fish, etc., per man per day,		.99	$0 09	.11	.31	–
Dairy products and eggs, per man per day,		1.55	06	.03	.18	.07
Animal food, per man per day,		2.54	$0 15	.17	.49	.97
Vegetable food, " "		2.65	07	.12	.01	1.13
Total food, " "		5.19	$0 22	.29	.50	1.20

Figure 8-1 a. Dietary for a Lowell boardinghouse of 77 persons. Source: Atwater 1886: 270.

Dietary Number, A 2.

Description: Boarding-house in Lowell, Mass., of 70 persons, 10 males and 60 females. Boarders, mill operatives. Time, one month. Estimated as equivalent in demands for nutrients to 58 men for 30 days, or 1 man for 1,740 days.

ANALYSIS.

Food-Materials.				Nutrients.		
Kinds.	Prices per lb.	Quantities.	Costs.	Protein.	Fats.	Carbohydrates.
	cents.	lbs.		lbs.	lbs.	lbs.
Beef,	10	425	$42 50	57.4	106.3	-
Beef steak,	16	250	40 00	36.3	39.0	-
Beef, corned,	7	300	21 00	34.5	85.5	-
Beef stew,	5	100	5 00	14.0	31.3	-
Pork, roast,	10	100	10 00	11.4	36.2	-
Ham,	12	150	18 00	21.9	51.5	-
Salt pork,	10	25	2 50	0.7	19.1	-
Lard,	8	150	12 00	-	146.5	-
Cod and haddock	7	150	10 50	14.6	0.3	-
Halibut,	14	50	7 00	7.6	2.1	-
Total meats, fish, etc.,		1,700	$168 50	198.4	519.8	-
Butter,	20	150	$30 00	1.5	131.3	0.7
Cheese,	10	30	3 00	8.1	10.7	0.7
Milk,	2	2,000	40 00	68.0	74.0	96.0
Eggs,	16	69	11 00	8.0	7.0	0.4
Total dairy products and eggs,		2,249	$84 00	85.6	223.0	97.8
Flour,	3½	1,372	$44 59	152.3	15.1	1,034.5
Rice,	8	15	1 20	1.1	-	11.9
Corn starch,	9	10	90	-	-	8.3
Crackers,	5	48	2 40	5.1	4.8	33.0
Sugar,	7	400	28 00	-	-	386.8
Molasses,	4½	77	3 50	-	-	54.7
Potatoes,	1 1-12	1,800	19 50	34.2	3.6	331.2
Beans,	4¾	93	4 50	22.0	2.0	51.0
Pease,	1⅔	30	50	6.9	0.5	15.7
Turnips,	6-6	90	75	0.8	0.2	4.6
Beets,	⅘	60	38	1.1	0.1	6.0
Cabbage,	1½	36	48	0.6	0.1	1.6
Apples,	1⅓	600	8 00	1.8	-	65.4
Raisins,	13	10	1 30	0.3	-	6.3
Total vegetable food,		4,643	$116 00	226.2	26.4	2,011.0
Total animal food,		3,949	252 50	284.0	742.8	97.8
Total food,		8,592	$368 50	510.2	769.2	2,108.8
Meats, fish, etc., per man per day,		.98	$0 10	.11	.30	-
Dairy products and eggs, per man per day,		1.29	05	.05	.13	.06
Animal food, per man per day,		2.27	$0 15	.16	.43	.06
Vegetable food, " "		2.66	07	.13	.01	1.15
Total food, " "		4.93	$0 22	.29	.44	1.21

Figure 8-1. b. Dietary for a Lowell boardinghouse of 70 persons. Source: Atwater 1886: 271.

Dietary Number, A 5.

Description: Boarding-house in Lowell, Mass., of 150 persons, 75 males and 75 females. Boarders, mill operatives. Price of board per week for males, $2.45; for females, $2.06. Time, one month. Estimated as equivalent in demands for nutrients to 135 men for 30 days, or 1 man for 4,050 days.

ANALYSIS.

Food-Materials.				Nutrients.		
Kinds.	Prices per lb.	Quantities.	Costs.	Protein.	Fats.	Carbohydrates.
	cents.	lbs.		lbs.	lbs.	lbs.
Beef, roast,	10	400	$40 00	71.6	49.2	–
Beef steak,	14	290	40 60	52.8	35.7	–
Beef, corned,	10	420	42 00	51.2	103.7	–
Veal,	11	200	22 00	30.4	11.2	–
Lamb,	10	150	15 00	20.4	35.7	–
Pork, roast,	9	300	27 00	34.2	108.6	–
Salt pork,	10	100	10 00	2.8	76.5	–
Ham,	10	300	30 00	43.8	102.9	–
Lard,	7½	150	11 25	–	148.5	–
Haddock,	7	155	10 85	12.9	0.2	–
Cod,	7	75	5 25	8.3	0.2	–
Total meats, fish, etc.,		2,540	$253 95	328.4	672.4	–
Eggs (80 doz. at 21 cts.),	15¼	110	$16 80	12.8	11.2	0.7
Milk (2,000 qts. at 4 cts.),	2	4,000	80 00	136.0	148.0	192.0
Butter,	20	350	70 00	3.5	306.3	1.8
Cheese,	10	50	5 00	13.6	17.8	1.2
Total dairy products and eggs,		4,510	$171 80	165.9	483.3	195.7
Flour,	3¼	2,744	$89 18	304.6	30.4	2,069.0
Graham meal,	2½	100	2 50	11.7	1.7	69.9
Corn meal,	3	50	1 50	4.5	1.9	34.6
Oatmeal,	4	125	5 00	18.9	8.9	84.0
Beans (2½ bush. at $1.75),	3	150	4 37	34.8	3.2	80.6
Rice,	8	20	1 60	1.5	0.1	15.8
Potatoes (48 bush. at 55 cts.),	9-10	2,880	26 40	54.7	5.8	529.9
Cabbage (4 bbls. at $1.00),	5	800	4 00	10.2	1.2	26.4
Onions (2 bush. at $1.00),	2	104	2 00	1.0	0.2	7.8
Beets (2 bush. at 50 cts.),	5-6	120	1 00	2.2	0.1	12 0
Turnips (2 bush. at 50 cts.),	5-6	120	1 00	1.1	0.2	6.1
Squash,	2	100	2 00	0.5	0.1	5.3
Apples (10 bbls. at $1.25).	¾	1,500	12 50	4.5	–	163.5
Sugar (230 lbs. at 5½ cts.; 654 lbs. at 7½ cts.),	5½ and 7½	884	61 70	–	–	854.8
Molasses (8 gals. at 45 cts.),	4 1/10	88	3 60	–	–	62.5
Corn-starch,	8½	12	1 02	–	–	10.0
Crackers,	6	24	1 44	2.6	2.4	16.5
Soda crackers,	12½	20	2 50	2.0	1 9	14.1
Raisins,	11½	15	1 72	0.4	0.1	9.5
Total vegetable food,		9,656	$225 03	455.2	58.2	4,072.3
Total animal food,		7,050	425 75	494.3	1,155.7	195.7
Total food,		16,706	$650 78	949.5	1,213.9	4,268.0
Meats, fish, etc., per man per day,		.63	$0 06	.08	.17	–
Dairy products and eggs, per man per day,		1.11	04	.04	.12	.05
Animal food, per man per day,		1.74	$0 10	.12	.29	.05
Vegetable food, " "		2.38	06	.11	.01	1.00
Total food, " "		4.12	$0 16	.23	.30	1.06

Figure 8-1. c. Dietary for a Lowell boardinghouse of 150 persons. Source: Atwater 1886: 272.

TABLE 8-1

Quantities of different types of food summed for the three Lowell boardinghouse dietaries (Figure 8-1, a-c). All quantities are for one month.

Item	Quantity (lbs.)	Number of People Served*
Beef and Beef, roast	1245	297
Beef, steak	812	297
Beef, corned	1072	297
Beef, stew	267	147
Beef, tripe	20	77
Beef, tongue	62	77
Total Beef	**3478**	---
Pork, roast	550	297
Ham	610	297
Salt pork	195	297
Total Pork	**1355**	---
Mackerel	40	77
Halibut	100	147
Cod and haddock	693	297
Total Fish	**833**	---
Veal	200	150
Lamb	150	150
Total Veal and Lamb	**350**	---
Lard	560	297
Milk	9024	297
Butter	791	297
Eggs	286	297
Cheese	143.5	297
Flour	5684	297
Sugar	1884	297
Molasses	264	297
Crackers	140	297
Corn starch	34	297
Corn meal	50	150
Graham meal	100	150
Oatmeal	150	227
Potatoes	7200	297
Rice	60	297
Beans	369	297
Cabbage	636†	220
Turnips	330	297
Squash	350	227
Onions	132	227
Beets	270	70
Peas	30	70
Tomatoes	120	77
Apples	2400	297
Raisins	49	297
Currants	15	77

*Three boardinghouses are included, with 150, 77, and 70 people, respectively.
†600 of the total of 636 pounds of cabbage were purchased for one boardinghouse of 150 people.

Source: Atwater 1886: 270-272.

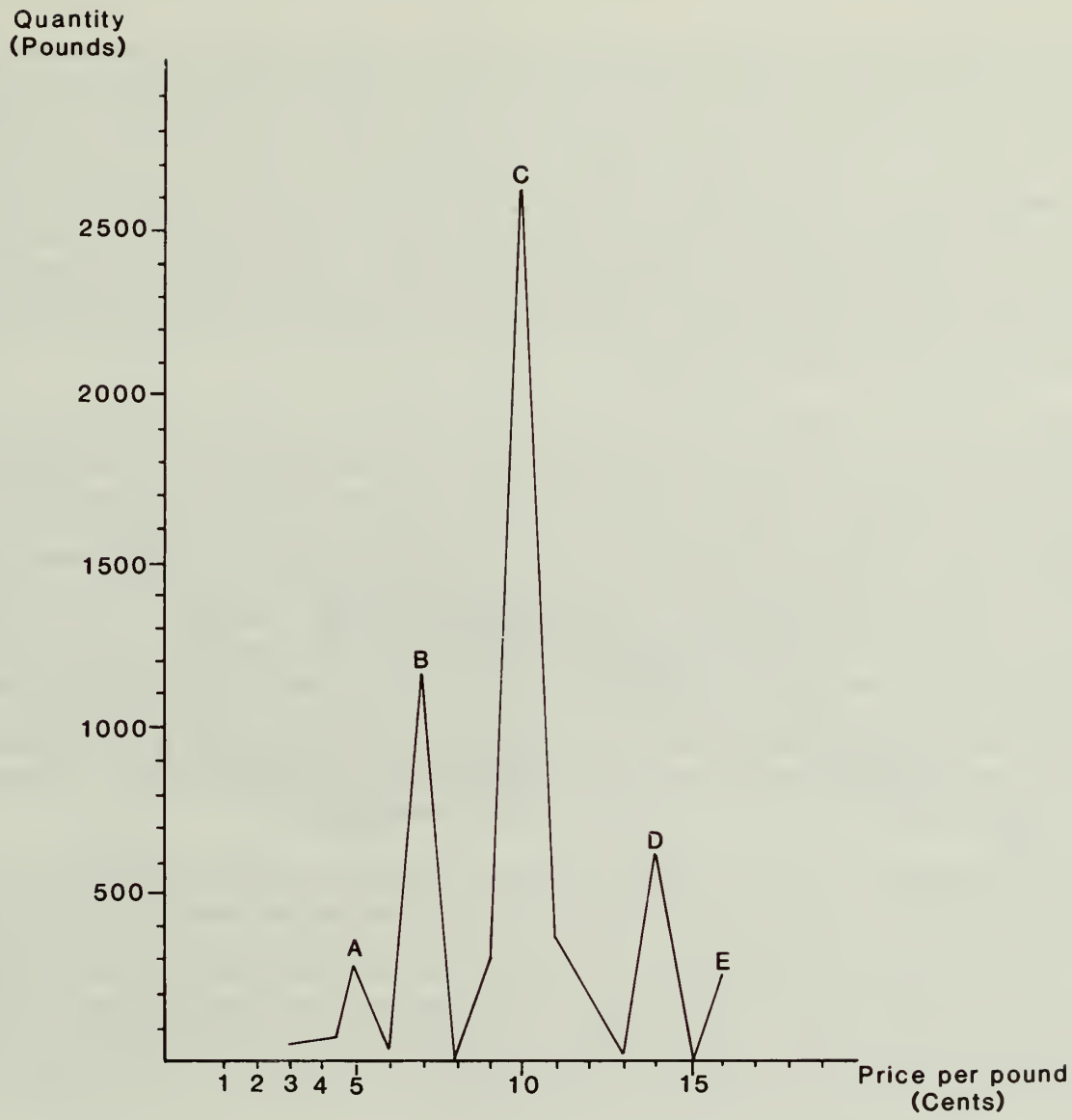
Other economizing measures can be seen by looking in more detail at the different types of meat that were bought. Meat preservation was of concern, as shown in the dietaries by the inclusion of cured meats such as corned beef, salt pork, and salt fish. Food that went bad was money out of the boardinghouse keeper's pocket. The prices paid for the various meats also imply that an effort was being made to be economical (Figure 8-2). The highest price paid for meat was 16¢/lb for steak. Even this price is not that high, as the most expensive cuts of beef in 1886 were going for 20¢ -25¢/lb (Atwater 1886: 252). By far the majority of the meat was bought for 10¢ /lb or less. The salt pork, beef, and ham bought at this price, and the 7¢/lb. for corned beef all rank at the low end of the price range for these products (Atwater 1886: 252). Fish purchases also show economic concerns. Cod and haddock, which were the most common sources of fish in the diet, were both relatively inexpensive (Singer 1985: 112, Tab. 1). Even this brief discussion is detailed enough to show that economic considerations were influencing the types and quantities of meat and fish purchased by the boardinghouse keepers.

Bringing together the various ideas presented provides a general picture of foodways in the Lowell boardinghouses. The 19th-century conceptual similarity between meals seems to have been undermined by the early 20th century. The early inclusion of salmon in the diet disappeared as the Merrimack River became increasingly impassable and polluted and, as a result, inexpensive ocean species such as cod and haddock became the primary source of fish. Beef was the meat most commonly eaten, followed by pork. Potatoes and apples were the primary vegetable and fruit, respectively, and far overshadowed the other fruits and vegetables included in the diet. Preservation seems to have been of concern, and the presence of cured meats as part of the diet reflect this. More important, economic concerns impacted food choices. Boardinghouse keepers tried to economize in the procurement of foods by selectively partaking of the goods and services offered by the market system and by buying at wholesale prices. Preparation was influenced by economic constraints, as in the case of soup and home baking. Additionally, making the meals appealing, inexpensive, or both, helped to attract both tenants and outside individuals to the boardinghouse dining rooms. There were undoubtedly exceptions to this general pattern, but it does offer valuable insight into the Lowell boardinghouse foodways.

Zooarcheological Evidence of Boardinghouse Foodways

It was stated at the outset that research from a foodways perspective is an approach very applicable to archeology. Graffam highlighted this relevance by including the discard of food-related trash in his definition of foodways. Archeological excavation offers the potential for recovery and analysis of some of this discarded material. Included in this would be floral and faunal remains, food preparation and service implements, and a variety of other foodways-related artifacts. The major portion of this chapter attempted to do two things. First, the food-related decisions of the boardinghouse keepers were put into perspective. Second, the historical record was examined in order to determine what information could be gathered about the factors influencing boardinghouse foodways. This suggested some hypotheses about the nature of Lowell foodways in general, and Lowell boardinghouse foodways in particular. Ultimately, this allows for fuller and more insightful interpretation of the archeological remains. It is possible, at this point, to make some preliminary comments as to how certain archeologically-recoverable materials can be interpreted within this broader framework.

To begin with, the patterns derived from the dietaries suggest some possible archeological implications. The different quantities in which fruit and vegetables were used provides a basis for hypothesizing about how seed remains would be represented archeologically. Large numbers of apple seeds should dominate the sample, followed by squash seeds and smaller numbers of other fruit and vegetable seeds. Similarly, cow bones should form the largest part of the faunal sample, with a moderate number of pig and fish bones and a small number of juvenile cow and sheep bones rounding out the sample. An important caveat to these statements must be given, however: the quantitative patterns for meat, fruit, and vegetables represented in the dietaries do not necessarily translate into the same patterns archeologically. For instance, some meat was undoubtedly



A- Stew beef
B- Cod, Haddock, Corned beef
C- Beef roast, Corned beef, Ham, Lamb, Salt pork, Pork roast
D- Steak, Halibut
E- Steak

Figure 8-2. Quantities of meat by price, summed for the three Lowell boardinghouse dietaries. Peaks tend to correlate with specific types of meat.

purchased without bones, or at the other extreme, with a disproportionately large number of bones. Further, some preparation techniques, e.g., the purchase of meatless bones for soup, or the breaking up of bones for soup, tend to skew the faunal sample. It is valid nonetheless to use the diet as a starting point for forming hypotheses as to the character of seed and bone samples in the archeological record.

The historical record makes it clear that meat was a very important component of the boardinghouse diet. It is also clear that choices as to the types of meat and specific cuts purchased were impacted by economic concerns. One valid way to try to interpret faunal remains would be to identify the cut of meat that a specific bone represents and put it into the context of 19th-century price information. In a sense this is simply examining faunal remains for indications of socioeconomic status, or, in this context, economizing measures. Since different types and cuts of meat had different prices, the faunal remains should relate to an expenditure pattern that offers insight into aspects of the foodways of the former site occupants. This basic type of approach has been utilized by several historical archeologists to study 19th-century faunal samples (e.g., Graffam 1984, Schulz and Gust 1983, Singer 1985). The approach used in this paper follows most closely that of Schulz and Gust (1983).

Relative prices for different varieties and cuts of meat were computed (Table 8-2). An attempt was also made to correlate the relative prices of cuts of meat with specific faunal elements that might be recovered through excavation (Figures 8-3 and 8-2, Table 8-2). With this information, the approximate relative price of the meat represented by discarded bones recovered archeologically can be determined. Although certain problems exist for this type of approach, the interpretaton of faunal remains within a relative price structure is a viable perspective from which to address the economization concerns inherent to boardinghouse foodways. The value of interpreting faunal remains within this framework can be seen by examining the small sample recovered in Lowell during the test excavations described in this report. Although only 128 bones were recovered, a discussion of these remains serves as a vehicle for refining some of the hypotheses about boardinghouse foodways suggested by the historical record. This in turn helps to provide a more coherent context for understanding boardinghouse foodways and interpreting future faunal remains recovered from the Lowell boardinghouse site.

The initial sorting of the bones began with separation by phylum and body part. The bones were identified using a variety of written sources, as well as comparative material (Chaplin 1968; Gilbert 1980; Harvey et al. 1968; Olsen 1964; Schmid 1972). The bones that were identifiable were each bagged with a tag listing (insofar as possible) the body part, symmetry, species, age of the animals, and modifications such as butchery marks, burning, and rodent gnawing (modified after Gifford and Crader 1977). Non-identifiable fragments and longbone shaft fragments were bagged separately. The results of this process are summarized in Table 8-3. As the sample was very small, no further analysis of the bones was attempted.

The problem of having a limited sample is compounded by the large number of fragmentary, non-identifiable pieces of bone. Less than 20% of the sample could be totally identified. Some interesting information can still be derived. For one thing, the pattern of animal representation shown by the bones is very different from the pattern implied by the dietaries. Turkey, chicken, and mutton were not listed in the dietaries, but are represented in the faunal sample. No pig or fish bones were in the sample, even though pork and fish were obviously part of the boardinghouse diet. Several factors might help account for these differences. The problem of sample size has already been mentioned. Also, it seems that poultry was not included in the nutritional study from which the dietaries were constructed. The quantities of eggs consumed suggest that chickens were available in some quantity, and Russell (1976: 355) suggested that the trade of poultry might be a part of the local marketing system. It is also possible that boardinghouse keepers were keeping domestic poultry. Chickens would be one of the easiest domestic animals to maintain, requiring only a small amount of space and providing eggs as well as meat. In the case of poultry, it seems that the archeological record can add information that augments the historical record. It is also unclear as to which month of the year that the dietaries were recorded. Different types of meat were probably available in greater quantities at specific times of the year. In nineteenth-century Boston,

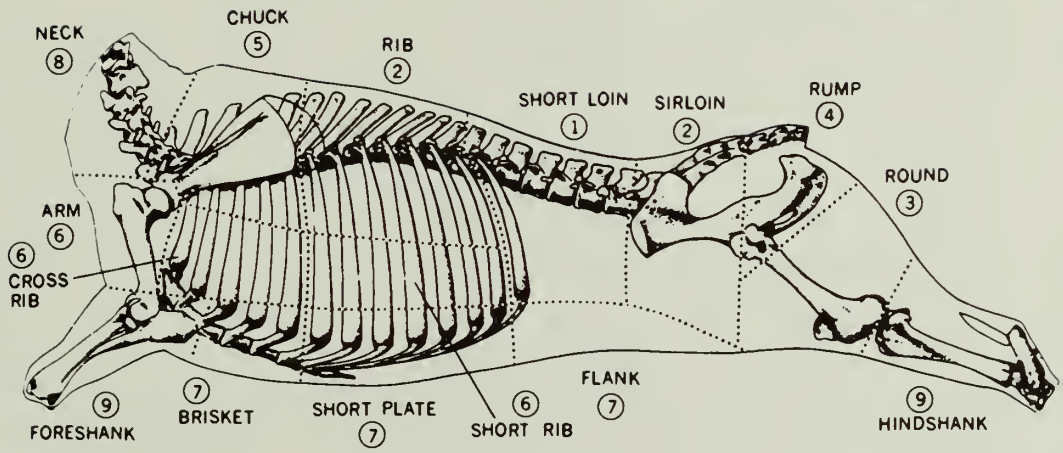


Figure 8-3. Major secondary cuts of beef, ranked according to late 19th-century retail values. Source: Shulz and Gust 1983: 48.

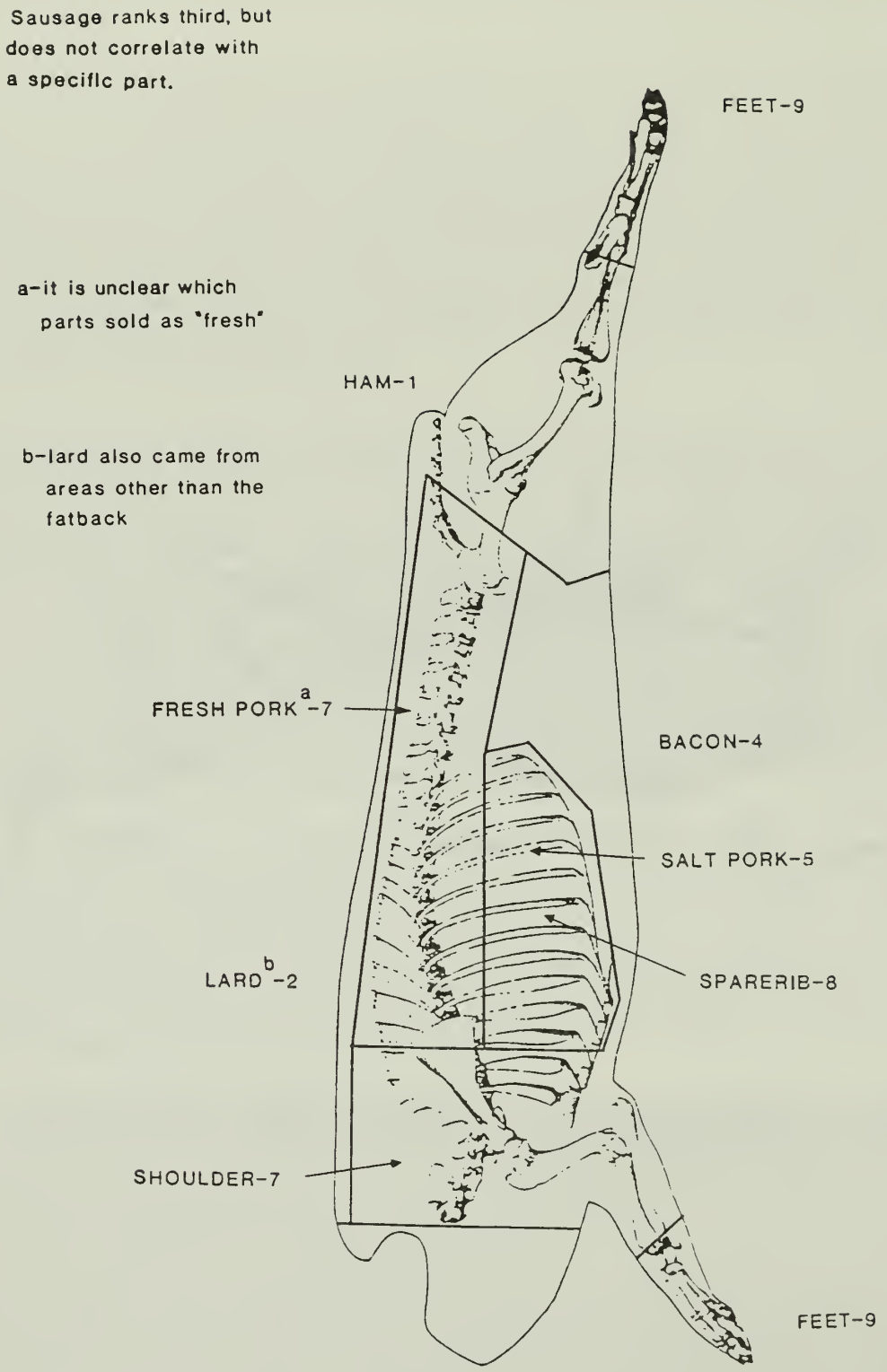


Figure 8-4. Relative value of different cuts of pork in the 19th century. Sources: Henrickson 1978; Levie 1979: Tab. 2.

TABLE 8-2

Relative Prices* of different types and cuts of meat through the nineteenth century.

Item	1830†	1840‡	1850§	1860¶	1870#	1878**	1883††	Average‡‡	Rank§§
Beef	1.1-3.1	1.9-3.2	1.8-3.05					1.61-3.13	
Wholesale			1.49	1.46				1.48	12
Corned				2.17	3.2-3.4	1.82	2.56	2.46	7
Round				2.17	5.6-6.0			3.99	5
Rump				2.72				2.72	6
Rump steak				3.91	8.00	4.71	6.22	5.71	2
Sirloin				3.63	8.00			5.82	1
Tripe			2.11		2.80			2.45	8
Roasting					5.00	3.29	4.12	4.14	4
Soup						1.20	1.93	1.57	11
Tongue					5.00			5.00	3
Liver					2.40			2.40	9
Suet					2.40			2.40	9
Kidney					2.0-2.4			2.20	10
Veal		3.03	1.9-2.7					2.66	
Wholesale				1.89				1.89	7
Leg		2.82						2.82	3
Cutlet				3.90		4.54	4.98	4.47	1
Shoulder				2.72				2.72	4
Breast&neck		2.21						2.21	6
Forequarter				1.87		2.34	2.68	2.29	5
Hindquarter				2.82		3.48	3.68	3.33	2
Pork	2.0-2.8	3.12	2.54					2.71	
Wholesale	2.19	2.12	1.70	1.96				1.99	9
Fresh	2.19			2.72	2.40	2.27	2.93	2.52	6
Salt	3.13			2.17		2.23	2.88	2.60	5
Sausage	3.13			2.72	3.00	2.57	3.19	2.93	3
Bacon	2.69							2.69	4
Lard	2.83	4.00	2.18	3.26	3.00	2.45	3.02	2.96	2
Ham			2.78	3.04	3.0-3.2	2.84	3.66	3.08	1
Shoulder				2.26	2.00	2.11	3.09	2.40	7
Feet					1.60			1.60	10
Sparerib	2.19							2.19	8
Mutton	1.7-2.5	.91-3.0						1.3-2.76	
Leg				2.72		3.93	3.93	3.53	2
Chop				2.72		4.20	4.51	3.81	1
Forequarter						2.34	2.71	2.52	3
Lamb	1.81	2.15						1.98	
Hindquarter				2.72				2.72	

TABLE 8-2, cont'd.

Relative Prices* of different types and cuts of meat through the nineteenth century.

Item	1830†	1840‡	1850§	1860¶	1870#	1878**	1883††	Average‡‡	Rank§§
Chicken	2.16				6.0-6.6			4.23	3
Turkey		3.33		3.21	5.0-7.0			4.18	4
Goose	2.19				4.0-6.0			3.59	5
Capon					8.00			8.00	1
Wild goose					4.0-5.0			4.50	2
Fish	1.03	1.30	1.14					1.16	
Fish, salt	1.28	1.45	.95	1.09				1.19	12
Mackerel		2.58	1.57	2.44	2.40	2.84	3.27	2.52	5
Salmon		7.21	8.67					7.94	1
Halibut	1.44	1.76	2.00					1.73	10
Eels	1.91	1.88						1.89	8
Codfish	.91	1.21		1.36	1.60	1.36	2.49	1.06	13
Shad		5.06						5.06	2
Pollock	.78							.78	14
Pickerel					3.40			3.40	3
Tautog					3.00			3.00	4
Whitefish					3.00			3.00	4
Swordfish					2.40			2.40	6
Perch					2.00			2.00	7
Cusk					1.20			1.20	11
Haddock	.63				3.00			1.80	9

Sources: 1830-1860: Wright and Pidgin 1885; 1870: Graffam 1984; 1878, 1883: Wright and Pidgin 1884.

* Relative prices are based on the price of the item per pound divided by the price per pound of flour. The price of flour is in dollars.

† $0.032.

‡ $.0033.

§ $0.037.

¶ $0.046.

$0.02.

** $0.041.

†† $0.036.

‡‡ Many of the average figures are derived from only a single entry, which raises some questions as to their validity.

§§ With the exception of fish and poultry, ranks were computed only for different cuts of each type of meat. All ranks are based on the average.

TABLE 8-3

Summary of Faunal Sample, Proposed Lowell Boarding House Park Site

Species	Body Parts Represented	Modifications†
Bos taurus cow	proximal femur (2) rib (4)	both sawn rodent gnaws (3) saw marks (2) scrape (1) shear (1)
Ovis aries sheep	first phalanx astralagus distal tibia radius scapulae (2) calcaneous	rodent gnaw sawn through distal shear
Gallus gallus chicken	distal tibia radius	distal shear
Meleagris gallopavo turkey	distal tarsometatarsus vertebra	distal shear
Rattus rattus (cf.) black rat	mandible humerus tibia	
Unidentified rodent	tibia	
Unidentified bird (3)		
Non-identifiable bones (81)		rodent gnaws (7) saw marks (5) scrape (1) cut (1) chop (1) shear (1)
Unidentified cranial, vertebral, rib, and longbone shaft fragments (23)		rodent gnaws (3) saw marks (2) shear (2) cut (1)

†Butchery marks are defined as follows:

Scrape -- a straight mark on the bone which does not gouge.
Cut -- a straight mark on the bone which gouges the surface.
Chop -- a cut that removes a section of the bone.
Shear -- a chop that goes through a portion of the bone, leaving a straight edge.
Saw -- a series of parallel scrapes caused by a toothed cutting instrument.

the peak period for sheep slaughtering was July through October (Smith and Bridges 1982: 9). The presence of sheep bones in the faunal sample and the absence of mutton references in the dietaries might reflect variations in the availability of mutton.

Certain economic and preparation implications are also visible in the faunal sample. It remains unclear whether the cow ribs excavated were from the chuck or rib section of the animal (see Figure 8-3). The two sections of cow femur, on the other hand, are the first and second cuts from the round (see Figure 8-3). Both were of a size indicative of their use as roasts (Gust 1983: 341-2). Interestingly, this is the part of the cow from which at least one of the Lowell boardinghouses, according to the dietaries shown as Figure 8-1, was getting all of its beef roast (Atwater 1886: 272-3). The bones of the sheep can also be put into the context of cuts and relative prices. The distal portion of the tibia (sawn through 5.36 cm up the shaft from its furthest distal end), the calcaneous, the astralagus, and probably the phalanx as well, would all have been part of the shank, probably the least valuable part of the sheep. Similarly, the two scapulae (both right) and the radius would likely have been part of the forequarter of the sheep, another relatively inexpensive portion (see Table 8-2).

Finally, another interesting aspect of the faunal sample is the presence of rodent bones. At least one rat and one other smaller rodent, possibly a mouse, are represented in the sample. Coincidentally, the single most common modification to the bones was rodent gnawing, seen on 16 of the bones. The presence of rats in the boardinghouses was remembered by Boott Mill boardinghouse resident Blanche Graham who said, "They had some in the boardin' houses. I remember they had mice uh rat traps to catch 'em" (Bond 1986: 19; see also Chapter 6). Despite the corporations' efforts to insure the cleanliness of the boardinghouse backlots, the very fact that they were crowded with drains carrying kitchen waste, cesspools, privies, and trash awaiting collection (see Chapters 5 and 6) made them attractive territory for foraging rats. Hence many of the bones from boardinghouse meals that did find their way into the archeological record bear evidence of the presence of these creatures so well adapted to the urban environment.

Conclusions

Taken together, the many ideas presented in this chapter form a complex yet intelligible image of boardinghouse foodways. In Lowell, as in other developing urban areas in the same period, the growing populations created an increased demand for commercially supplied foodstuffs. Infrastructure and technological improvements helped food suppliers meet this demand by increasing their market access and providing increasingly sophisticated food-preservation methods. Firms within Lowell were marketing a large range of locally and more distantly produced foodstuffs. A variety of services were being provided as well, including wholesale and retail sales, commission sales of local produce, and delivery of purchases.

Within this market system the boardinghouse keepers were selectively purchasing goods and services in order to provide meals to their boarders while maximizing their own livelihoods. Economization measures can be seen in the preparation and procurement of boardinghouse food. Additionally, preservation was clearly an important consideration for both meat and vegetables. While questions remain, the historical record does give a relatively good picture of the diet and of the issues involved in boardinghouse foodways. This provides a context within which faunal remains can be interpreted and understood.

The examination of even this small faunal sample has helped to refine certain hypotheses and to create a more comprehensive framework for future investigations. The inclusion of archeological data in the picture of boardinghouse foodways indicates some of the inadequacies of the historical record and points out possible issues for further research, specifically, seasonal variation in meat procurement and availability in the urban context.

Most important, analysis of this small zooarcheological sample has shown the validity of

viewing faunal remains within the context of relative price structures in order to understand the economic nature of the decision-making process for boardinghouse keepers, who wished to realize a profit from their operations. Even in such a preliminary study it is clear that concerns for economy can be seen as affecting boardinghouse foodways in every aspect, from conceptualization to distribution and purchase, from preparation and consumption to disposal of food-related wastes. What is more, this economizing focus is vividly reflected in the zooarcheological record at the Boott Mill boardinghouses.

Chapter 9

PALYNOLOGY AND ARCHEOBOTANY OF THE LOWELL BOARDING HOUSE PARK SITE

by Stephen A. Mrozowski and Gerald K. Kelso

Introduction

Human settlement of any area invariably leads to some form of alteration of the environment. In cities the impact gives rise to a landscape that is a distinctly urban mosaic of micro-environments forged from a curious blend of both natural and cultural forces. Viewed from an ecosystemic perspective, cities are characterized as heterotropic because of their dependence upon outside sources for much of their food, water, and raw materials (Odum 1975: 42; Douglas 1983). The study of urban landscapes is not a new endeavor, as the work of urban geographers such as Conzen attests (1932, 1938, 1960; see also Whitehand 1981), but it has received less attention from other social scientists who have focused primarily on social processes devoid of any ecosystemic context (Lampard 1983: 3-53, 1985: 194-249). In Lowell, we have the perfect laboratory to explore a particular type of urban landscape, that of a planned, industrial city. In constructing our image of Lowell's evolving urban landscape we will combine our concern for the built environment and interior space with the study of plant communities and the urban environment in general. In so doing we can, as this chapter illustrates, employ the analysis of pollen and plant macrofossils in an exploration of an evolving environment and its social/biological expression that the landscape represents.

Plant Remains and Archeology

The study of plant macrofossils from archeological sites has been with us since the 19th century (e.g., Kunth 1826; Heer 1866). Palynology is a relative newcomer by comparison, but it has nevertheless emerged as one of the primary components of archeology's interdisciplinary repertoire (e.g., Dimbleby 1985; Butzer 1971, 1982; Evans 1978). Archeologists' interest in the archeobotanical record has focused on two primary areas of research: general environmental reconstruction and the study of the evolution of human diet, including questions concerning the origins of plant domestication (e.g., Bryant and Holloway 1983: 191-224; Butzer 1982: 172; Ford 1985). In Lowell, while our interests include reconstructing the overall environment and dietary patterns, our concerns also encompass the use of space in the city as a whole and in the boardinghouse yards in particular. The complementary nature of palynology and the study of plant macrofossils (see Watts and Winter 1966: 1339-1360; Birks and Mathewes 1978: 455-484; Birks and Birks 1980: 66-84) make them well suited for this task, because each one provides data on plant communities at differing spatial scales. This affords the researcher the opportunity to conduct micro-environmental reconstruction. Combining the two approaches is particularly useful in urban settings where the diversity of activities and their accompanying land-use characteristics necessitates analysis at varying spatial scales.

Both palynology and the study of plant macrofossils have their own interpretive pitfalls that need to be considered, and these will be addressed in the sections that follow. The reader is cautioned, however, that the results presented are exploratory and represent an initial phase in the overall study of Lowell's evolving urban landscape. Our observations are limited by the small sample upon which our results are based.

Palynological Exploration at the Boott Mill Boardinghouses

by Gerald K. Kelso

Between 20,000 and 50,000 pollen grains per year have been falling on each exposed square centimeter of New England for the last 12,000 years (Davis 1969: Fig. 3). Fungi and oxidization have destroyed the majority of the pollen grains deposited on terrestrial surfaces, and most archeological investigations incorporating pollen data have focused on environmental factors derived from correlating cultural data with the pollen spectra of lake and marsh sequences (King, Klipple and Duffield 1975: 180). Both oxygen content and numbers of aerobic microbes decrease with increasing soil depth, and acidity discourages the latter (Burges 1958: 83; Dimbleby 1967: 120). Exceptions to this rule of poor preservation have been reported where caves have provided permanently dry environments (Schoenwetter 1974; Bryant 1974), where sheetwash from occupation surfaces has been deposited in a permanently wet situation, and where sediments have been contaminated by fungicidal metal salts from corroding artifacts (King, Klipple and Duffield 1975). Recent work in downtown Boston suggests that we may add historical urban deposits, even where, for as yet unexplained reasons, sediments are as dry, thin, and slowly-accumulated as those excavated at the Paul Revere House site (Kelso 1986).

This palynological study of the Lowell Boarding House Park Site test trenches is purely exploratory. Our first, although not primary, objective is to ascertain whether sufficient pollen has survived ca. 150 years in the relatively dry, exposed environment of the boardinghouse backlots. Given adequate preservation, our second, but primary objective is to determine if there are distributions of pollen frequencies within the spectra that suggest that a more extensive investigation might reasonably be expected to yield data reflecting the nature of human activities within the backlots. Floral indicators of cultural changes such as a relaxation of landscape maintenance standards with the shift to crowded tenement conditions for immigrant labor (see Chapter 5) were anticipated.

Pollen Sources and Preservation Indicators

Observation of modern pollen dispersal indicates wind-transported arboreal pollen generally reflects regional vegetation, while non-arboreal pollen indicates local plant communities. In studies of natural prehistoric deposition situations these respectively translate into climate and edaphic conditions (Janssen 1973: 33). Human manipulation of the vegetation on a larger than living-site-area scale is evident in the pollen record from the European Mesolithic onwards (Sims 1973: 224-226) and is a major consideration in environmental analysis of Neolithic and subsequent sediments (Iverson1941). The Europeans who migrated to North America departed an area with little remaining unmodified flora, and they made short work of the New England forests (Cronon 1983: 108-126). Environmental signals have been largely, although not entirely, eliminated from the historical era pollen record of this section, and arboreal pollen frequencies, although still a regional register, record population trends among trees where humans want or permit them to grow or where long-distance pollen transport from forests not yet destroyed (Davis 1983: 178-179; Kelso 1985: 363-366, 387; Kelso 1986). The urban landsape is a human creation. Plants grow where people want them to or where people do not care, largely the latter, and weedy taxa dominate the non-arboreal pollen spectrum. Trends among urban non-arboreal pollen types correlate with documented horizontal and temporal differences in human activities and appear to record quite sensitively land use in a relatively circumscribed area around each sampling locus (Kelso and Schoss 1983; Kelso and Beaudry n.d.; Kelso 1986).

To the two pollen sources of cultural data provided by the forest remnants and urban weeds must be added the pollen of food plants. The urban pollen record in this respect is impoverished relative to the extensive list of vegetables and herbs available to historical New Englanders (Russell 1976: 145). Corn *(Zea mays)* makes occasional, sometimes substantial, appearances, and a few counts indicating consumption of gathered or minor cultivated vegetal resources have been recorded

(Reinhard, Mrozowski and Orloski 1986; Kelso 1986; see Table 9-1 for vernacular and Latin names of species mentioned in this chapter). Only Eurasian cereal grasses--wheat *(Triticum),* barley *(Hordeum),* oats *(Avena),* and rye *(Secale)* are, however, represented with any regualrity (Kelso and Schoss 1983; Kelso and Beaudry n.d.; Kelso 1986). None of this cereal grass pollen *(Cerealia),* with the exception of rye, is widely dispersed (Behre 1983: 80), and its distributions in profiles appear to correlate with the kind and intensity of human activities, where these are documented (Kelso and Schoss 1983: 75). The *Cerealia* pollen type would appear to be our premier marker for food waste or for food-processing waste and changes therein, in historical New England sediments.

Any archeologist dealing with the historical period can attest to the frequency with which urban humans have manipulated the very sediments that carry the pollen record. Where this has occurred, measure of pollen preservation and pollen concentration may be more informative than changes in pollen percentages. In a normal situation of stratigraphic accumulation, the primary mechanisms of pollen degradation, free oxygen and aerobic fungi, operate against pollen preservation at any given depth until sufficient overburden has accumulated to create an anaerobic environment, terminating the destruction and stabilizing the spectrum. This results in a preservation situation in which the proportion of pollen that is corroded is highest and the pollen concentration per unit of matrix is lowest at the bottom of the profile. Where fill has been intentionally placed on a site, the opposite occurs. The pollen deposited at the bottom is afforded the instant protection of an anaerobic environment, while free oxygen and fungi have greater access to pollen nearer the surface. The result is a mirror image of pollen preservation in a normally developed profile. More and better preserved pollen is found at the bottom of the profile than at the top. Dumping incidents may also be marked by blocks of inconsistently uniform pollen frequencies. This is especially evident if the fill is derived from an area with a flora that contrasts with that of the location of final disposition.

Methods

At least one profile of contiguous samples was collected from each of the four test trenches that were excavated at the Lowell Boarding House Park Site (see Chapter 6). A one-sample-per-stratigraphic-layer profile was collected from the boardinghouse cellar fill exposed in the eastern portion of Test Trench #1, and 10 cm-interval profiles were taken from all features. Preliminary examination of a representative selection of samples indicated that pollen preservation in most was good. The cellar hole profile at the east end of Test Trench #1 and that from Feature 8, taken from the west wall of the same trench, were selected for further exploratory analysis on the basis of apparent variation in both the pollen spectra and pollen concentration per gram.

Analysis was conducted in the palynology laboratories of the Boston University Center for Archaeological Studies. Extraction followed Mehringer (1967), and residues were mounted in glycerol for viewing. The pollen was identified at 400x with problematical grains examined under oil immersion at 1000x. A minimum of 400 pollen grains were tabulated for all samples except nos. 5 and 6 of the east profile, where only 200-grain counts were economically possible.

Pollen concentrations per gram of sample were computed following Benninghoff's (1962) exotic pollen addition method, as a check against preservation-related differences in the spectra. Pollen concentration figures were not computed for individual taxa because these would not be meaningful in the absence of chronological control over sedimentation rate and might be mistaken for pollen influx data. All pollen grains of all types displaying signs of deterioration and all pollen grains too degraded to be identified were tabulated to provide further control over corrosion factors. Unidentifiable pollen grains were not incorporated in any sum from which the frequencies of other types were computed, but the data for this pollen group and for corroded oaks, a prominent pollen type which retains its identity while readily degrading (van Zeist 1967: 49), are presented in the diagrams (Figures 9-1 and 9-2).

TABLE 9-1

Vernacular and Latin Names of Plants

Pinus -- pine
Picia -- spruce
Tsuga -- hemlock
Cupressaceae -- cedar/juniper
Quercus -- oak
Fagus --beech
Castanea --chestnut
Betula -- birch
Alnus -- alder
Corylus -- hazel
Oystra/Carpinus -- hornbeam, blue beech
Acer saccharinum -- silver maple
Acer saccharum -- sugar maple
Acer rubrum -- red maple
Juglans --walnut
Carya -- hickory
Salix --willow
Populus -- poplar
Fraxinus -- ash
Ulmus -- elm
Celtis -- hackberry
Rhamnus -- buckthorn
Nemopanthus -- mountain holly
Ilex -- holly

Gramineae -- grass
Avena fatua -- wild oats
Cerealia -- European cereal grass
Chenopodiaceae -- goosefoot family
Compositae -- ragweed family
Artemisia -- wormwood
Ambrosia - type -- wind-pollinated Compositae
Aster - type -- insect-pollinated Compositae
Liguliflorae -- dandelion-type Compositae
Cruciferae -- mustard family
Umbelliferae -- parsley family
Rumex acetosella -- sheep sorrel
Leguminoseae -- pea family
Rumex acetosella --sheep sorrel
Rumex mexicanus -- dock
Solanaceae -- nightshade family
Cannibinaceae -- hemp family
Caryophyllaceae -- pink family
Oxalidaceae -- wood sorrel family
Polygalaceae --milkwort family
Thalictrum -- meadow rue
Plantago-lanceolata -- lance-leaved plantain
Plantago - major type -- broad-leaved plantain
Primulaceae -- primrose family
Onagraceae -- evening primrose family
Liliacea -- lily family
Rubiaceae -- madder family
Viola -- violet
Vitaceae -- grape
Ericaceae -- heather family
Cyperaceae -- sedge family
Typha -- cattail
Equisitum -- horsetail
Rubus -- raspberry/blackberry

Undetermined -- not recognized

Undeterminable -- too degraded to recognize

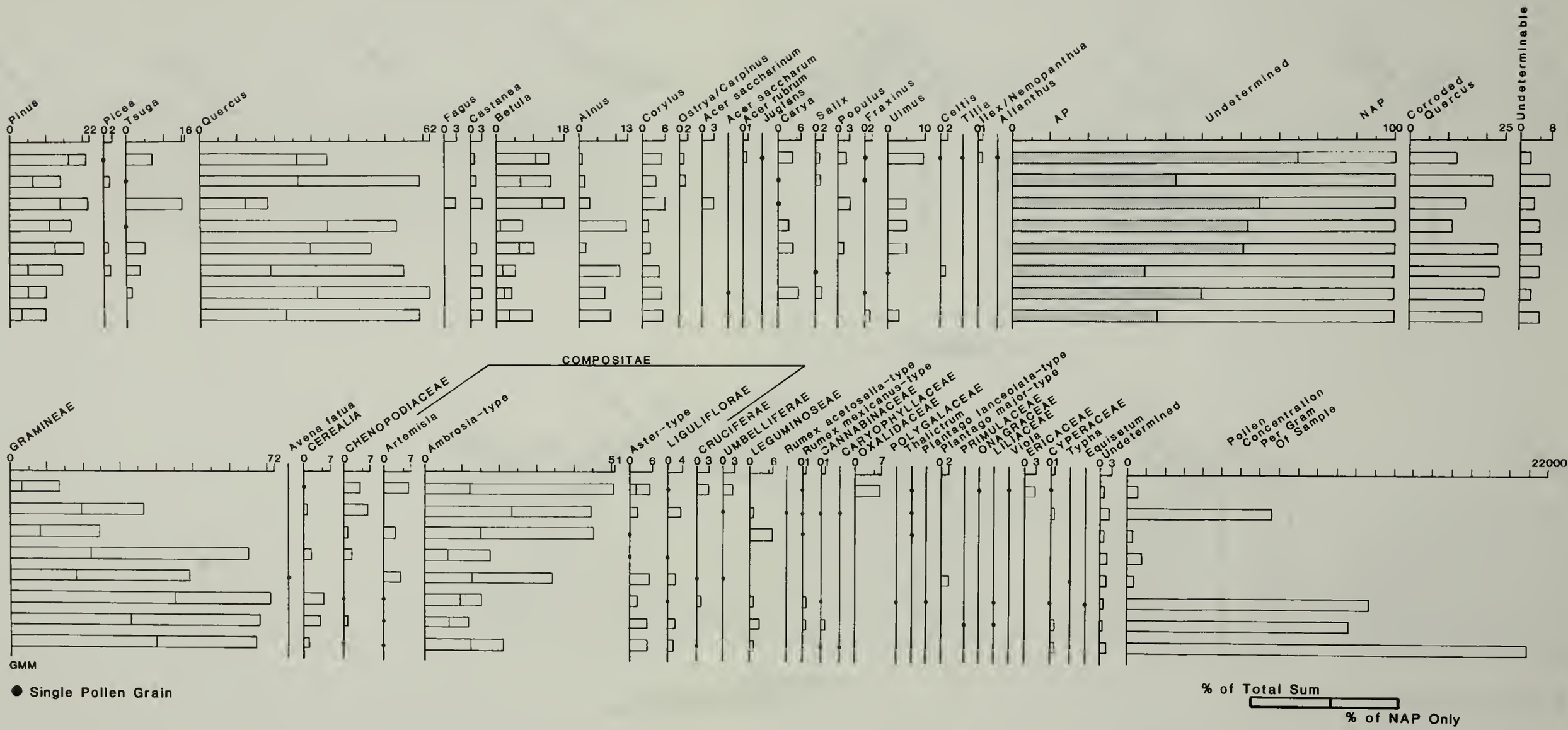


Figure 9-1. Pollen sample results, Test Trench #1 east wall profile.

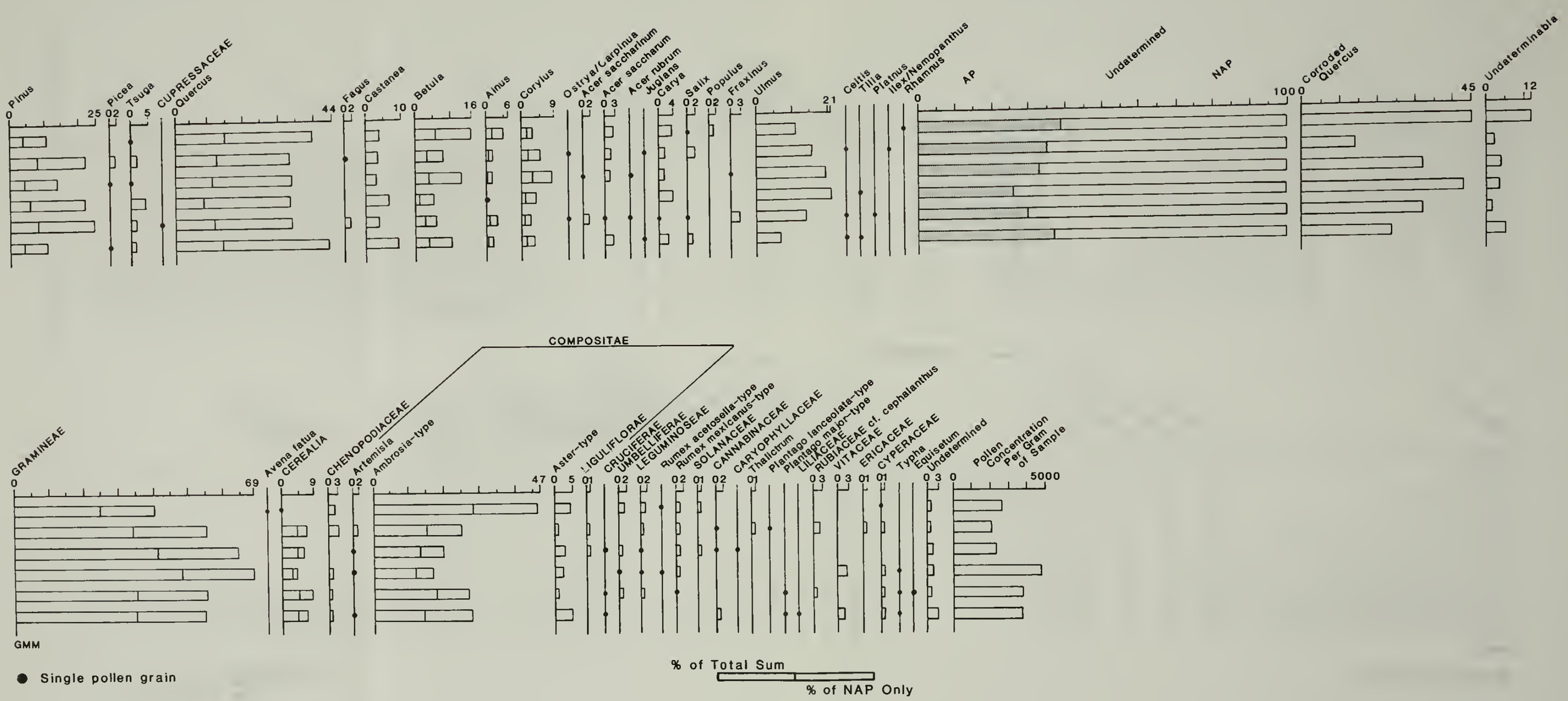


Figure 9-2. Pollen sample results, Test Trench #1 south wall profile.

The data presented in the diagrams are relative frequencies (percentages) computed for separate sums for arboreal and non-arboreal pollen types. This separation serves to differentiate regional and local pollen types to some extent and reduces the statistical distortions that the contributions of pollen types reflecting different phenomena induce in each other. It has the disadvantage of producing possibly misleadingly high percentages in some instances, the *Leguminoseae* count of sample no. 5 in the east wall profile, for example, from small counts in minor types.

Results

Floral responses to land use or environmental change are usually manifested in variations in the contributions of two or more pollen types. A single kind of pollen that goes its own way, the effects of taxa-specific forest pathogens aside (Davis 1983: 177), is usually assigned to the ethnobotanical component. It is also uncommon for the shifts in the pollen record, epoch-defining climatic changes excluded, to extend completely across the major elements of the spectrum, encompassing arboreal and non-arboreal types alike. When this happens in an archeological sequence, some factor more closely related to deposition of the sediment than to deposition of the pollen should be suspected.

Such a break occurs in the sample no. 4 to sample no. 6 segment of Test Trench #1 east wall profile. At this point pine *(Pinus)*, hemlock *(Tsuga)*, birch *(Betula)*, elm *(Ulmus)*, goosefoot family *(Chenopodiaceae)*, wormwood *(Artemisia)*, and wind-pollinated Compositae *(Ambrosia-* type*)* percentages rise while those of oak *(Quercus)*, alder *(Alnus)*, non-domesticated grass *(Gramineae)*, European cereal grass (Cerealia) and insect-pollinated Compositae *(Aster-* type*)* decline. The arboreal pollen portion of the total sum expands, while that of the non-arboreal types contracts and, perhaps most significantly, pollen concentrations per gram of matrix drop abruptly above sample no. 3. The proportion of oak pollen grains that are not noticeably degraded increases initially, drops off, and then rises again through sample no. 7.

The preservation indicators suggest an episode in which a relatively polliniferous fill was deposited up to the approximate vicinity of sample no. 4 and left exposed for an undetermined length of time, resulting in the preservation of large pollen concentrations in the deeper layers and more extensive, post-depositional pollen corrosion toward the top. The European cereal grass pollen content of the profile is largely concentrated in the deeper three samples, suggesting that the source of the fill was a cultural deposit of some sort, a grassy one at that, and support Beaudry's contention (see Chapter 7) that the backlot was mined to fill the cellar when the boardinghouse was demolished.

A subsequent fill appears to have been deposited on top of the first and, given the progression in degraded oaks from sample nos. 5 through 7, the location of the pollen corrosion process was transferred upward in the profile until terminated at a still later date by installation of the parking lot blacktop and the sand bedding from which pollen sample no. 8 was taken. The extremely low pollen concentrations per gram in sample nos. 4 through 7, coupled with the prominence of the arboreal element (i.e., regional) and wind-pollinated Compositae in the pollen spectrum suggests that this fill was derived from an area supporting little local vegetation other than a few weeds. The scattered grains of cereal pollen in this segment of the profile suggest that the already stripped-off boardinghouse backlot was the source of at least part of this fill. The coincidence of a relatively high pollen concentration and larger numbers of corroded oaks in sample no. 7 becomes less incongruous when it is considered that the fill contained little pollen to start with when relocated over the cellar hole, and that which was present was equally distributed through the deposit. Any subsequent pollen deposition would occur at the top, where corrosive elements were also most prevalent. The oily nature of sample no. 7, noted at collection, may also have served as the equivalent of a "sticky slide" on which an artificially high concentration of pollen was trapped.

The native chestnuts *(Castanea)* of eastern North America were exterminated by a fungal

blight between 1904 and 1950. The disease was first noted in the New York area in 1904 and had reached southern New England by 1920 (Anderson 1974: Fig. 1). Independent sources confirm its presence in southern Maine by 1930 (Davis 1967: 145). The trees contributing to the Boott Mill boardinghouse spectra should have been affected sometime between these last two dates. The chestnut percentages of the two upper samples are generally lower than any others from the site, sample no. 5 aside, including the undiagrammed test samples from the other trenches, and are consistent with the predictable decline in the distribution of this type in the mid-20th century. Neither the sand underlying the parking lot nor the upper fill in the cellar is primary to the profile locus, and the phenomena recorded here, in sample no. 7 at least, are probably an indirect record of the chestnut decline expressed in the dilution of the chestnut content of existing pollen spectra in exposed sediments by later pollen deposition containing less chestnut pollen.

The time of the pollen movement from the backlot to the cellar is securely enough dated as post-1942, the year in which the boardinghouse was demolished, but the chronology of the original pollen deposition has yet to be established. It is possible that the slightly higher oak corrosion figures for sample nos. 3 and 4 are not significant and that the inverted stratigraphy described here is a one-time event, with the pollen-poor deposit at the top of the cellar hole profile originating as pre-construction, or at least pre-occupation, fill under the boardinghouse backlot. Relative dates derived from comparison of the profile's arboreal pollen spectra with the regional pollen rain may resolve this question, provided an undisturbed sequence of the local accumulation of regional pollen is located. At the current time the most that can be said is that the sharply reduced oak frequencies in sample nos. 6 and 8 are probably artificial, the latter accumulated in builder's sand and the former in cinders, and that the remaining depression of this type in the upper fill can be accounted for as statistical suppression by the expansion of the pine, hemlock, birch, and elm contributions. The higher alder frequencies in the deeper fill coincide with the majority of the few occurrences of mesic herb pollen in the profile and suggest a moister situation during the formation of those spectra.

Humans are burrowing animals, and virtually every archeological site is cratered with occupation-period holes. Archeologists frequently seek palynological evidence for the age, function, or environmental setting of such features. In prehistoric sites these often have the appearance of caches, and evidence for the taxa of stored plants (Kelso 1980) and the season of construction (King, Klipple and Duffield 1975) has been recovered through pollen analysis. Post holes are another matter. Their pollen spectra generally predate the construction of the pit (when the post is still in place), post-dates the abandonment of the pit (when the post has been removed), and can be a mixture of the two when slumping has occurred. At least one well-published palynologist (Dimbleby 1985) has enjoined archeologists not to bother.

Feature 8 has been tentatively identified as a ca. 1890s clothesline post hole, without surviving evidence of either the post or a post mold (see Chapter 7), and the pollen spectra are appropriately confusing. Grass and wind-pollinated compositae frequencies are uniform in the deepest two samples, but the former rises and then declines in sample no. 3 and above, while the latter does the opposite. Oak pollen percentages are strikingly uniform in the center of the sequence, and little variation is evident among the relatively prominent European cereal grass frequencies. Elm frequencies rise through the center of the profile and then decline, and it is possible, although based on one or two high counts, that there was an increase in the birch and hazel *(Corylys)* contribution during deposition of the upper portion of the fill. A potential mirror image of the oak pollen pattern in the pine spectrum is disrupted by a low count in sample no. 4.

Variation in pollen spectra may be the product of any number of mechanisms, ranging from the desirable changes in the parent vegetation to the undesirable statistical influence of chance data recovery in the smaller sums of minor types. Homogeneous counts generally result from continuity in the size of the contributing plant population or through thorough mixing of the deposits. It appears that all of these processes were at play in Feature 8, and it seems prudent at this point to take Dimbleby's advice.

The spectra, even if not currently interpretable, do, however, record some kind of change in

the middle of the Feature 8 profile. This event is also reflected in the pollen concentration and oak pollen corrosion data as well as in the arboreal/non-arboreal pollen ratios. The internal homogeneity of the pollen concentrations and the arboreal/non-arboreal ratios within the upper and lower profile segments suggest two separate, one-time-deposition events while the proportion of oak pollen that was corroded suggests a prolonged accumulation of the upper half of the profile. This parallels the conflict between the general uniformity of the oak pollen and the European cereal pollen percentages through the profile and the contrast between the grass and wind-pollinated compositae counts in the two segments of the fill. A hypothetical scenario may be proposed in which an existing pit at the location of Feature 8 was re-opened down to about the location of sample no. 3, somewhat above the rock that is thought to have served as a base support for the clothesline pole, and then allowed to fill naturally, producing a pollen spectrum that is a combination of old pollen from slump and new pollen reflecting the replacement of grass by weeds in the backlot ground cover. The artifact content of the fill is late 19th century in date (see Chapter 7), and the weedy interval may be a late-occupation phenomenon. Pollen concentrations in the upper Feature 8 samples are high relative to those in the upper cellar fill, and it is possible that this is a different weedy interval than that recorded at the latter location.

Summary and Conclusions

Too many cultural events are recorded in the Boott Mills boardinghouse pollen profiles rather than too few, and the evidence for later occurrences is overlain on that of the earlier without completely erasing them, rather after the fashion in which a composite soil profile records both earlier and later environmental parameters in the same sediments. In the Boott Mills case, land-use data recorded in pollen type frequencies reflecting changes in the flora are rather garbled, but sequences of depositional events, largely post-occupation, are convincingly registered in a combination of patterned distortions of the pollen percentages, pollen concentration figures, pollen corrosion data, and general arboreal/non-arboreal pollen ratios. An undated shift from more grassy to more weedy conditions does, however, appear to be recorded, and the presence of quantities of European cereal grass pollen rather exceeding those accompanying domestic trash in 18th-century Boston deposits (Kelso and Beaudry n.d.) implies that, if not derived from nightsoil or chicken feed, significant quantities of waste grain products, at least, were deposited in the backlot during the occupation.

Comparison of these data with an undisturbed pollen sequence, perhaps from the well, should clarify local land-use history and help us understand cultural deposition distortion patterns in other matrices. Better data relative to trends among minor pollen types would also bolster our confidence in our interpretation of land-use and matrix-deposition trends. This will require a closer sampling interval and rather larger counts than those employed to date. Pollen preservation at the Boott Mills boardinghouses was not really bad, but it was not good enough to withstand the rather harsh measures required to further concentrate the pollen in the extraction residues, and a significant increase in analysis time will be required in future studies at the site. The clarifications of matrix-disturbance data provided to the archeologist by pollen analysis are more than adequate to justify this expenditure of effort.

Plant Macrofossil Analysis

by Stephen A. Mrozowski

Plant macrofossils are any portion of a plant that is a "potentially identifiable fossil preserved in sediments which can by seen by the naked eye" (Birks and Birks 1980: 66). This includes many plant remains, but in this study we will focus upon one category of macrofossil: seeds. In contrast to plant pollen, macrofossils can frequently be identified to the species level, and because of their

relatively large size "they . . . are not usually transported very far from their original point of origin" (Birks and Birks 1980: 66). Another advantage macrofossils offer, especially in conjunction with palynology, is that they often are from plants that are not prodigious pollen producers. This provides the researcher information on a large number of species that may be poorly represented in the pollen spectra (Birks and Birks 1980: 66-67).

Plant macrofossils do present some vexing interpretive problems that must be considered in any analysis. Because of their limited dispersal characteristics, they are not very useful for reconstructing regional vegetation patterns. This same limitation (low dispersal characteristics) results in fairly low numbers of macrofossils being recovered from sediments, although archeological deposits sometimes contain thousands of seeds. This is often the case, for example, on sites where large concentrations of seeds are the direct result of human activity (e.g., grain processing or food-waste disposal). Remains such as these are very useful for reconstructing dietary patterns. If, however, macrofossils from plants grown in yards or gardens are sought in hopes of reconstructing micro-vegetational patterns, the low dispersal rates can pose a dilemma. On the other hand, these dispersal characteristics do present one advantage: normally, "the number of fossils is approximately proportional to the abundance of the organism . . . (in this case plants) . . . in the environment" (Birks and Birks 1980: 67). This means that the relative percentage of seeds found in archeological deposits may be used to infer the abundance of different plant types in the past, as opposed to merely determining their presence or absence.

In addition to problems surrounding the interpretation of plant remains, there are inferential barriers as well. The basic difficulty is one common to all archeological research, namely, inferring past behavior from a static record of the past (cf. Binford 1978; Gould 1980). With regard to plant macrofossils, the complicating factors include the differential preservation of remains as well as the possible intrusion of modern seeds (e.g., Keepax 1977; Minnis 1981; Kaplan and Mania 1977; Green 1982). These problems are often the product of natural processes, but the archeobotanical record is profoundly influenced by human actions as well (Dennell 1972; Jones 1985: 108-111). The dilemma facing the researcher is how to sort out variables that can structure the record of the past and how to decode them in some meaningful way that will inform about natural and cultural processes in the past.

Methods

Although soil samples were collected from each of the four test trenches excavated at the proposed Lowell Boarding House Park Site, only samples from Trench #1 and Trench #2 were processed and analyzed. These two trenches provided the best examples of yard space as well as the majority of subsurface archeological features. This is particularly true of Trench #2. In all, six samples were processed via a froth-flotation device. This processing included the use of a soil-dispersing agent. In addition, 50 oven-dried poppy *(Papaver somniferum L.)* seeds were placed in each sample prior to processing in order to gauge recovery rates.

Following flotation, all samples were air dried. They were they scanned with a low-power microscope. Seeds recovered from this initial scanning were then reexamined. Identifications were made with the aid of standard seed manuals (i.e., Martin and Barkley 1961; Montgomery 1977) and type specimens. The majority of identifications were made at the family or genus level with species indicated where possible.

Results

Recovery rates were found to range from 2% to 28% based upon the number of poppy seeds recovered from the individual samples. It is difficult to gauge the efficacy of the flotation device from these figures, primarily because of the nature of the fills. As is often the case on urban archeological sites, soil samples were heavily laden with gravel and building rubble that may have resulted in the variable recovery rates. The fact that some samples produced recovery rates between

10% and 30% is considered more than adequate for soils such as these, so that we feel our results have not been skewed by the flotation processing.

Trench #1

Only one sample from this trench was processed; it had been collected from Level 3. As Beaudry notes in her discussion of the field results (see Chapter 7), Level 3 contained architectural debris and mixed twentieth- and nineteenth-century materials. This level produced virtually nothing in the way of botanical remains, with the exception of a badly corroded and unidentifiable seed, along with a leaf fragment. The presence of a leaf fragment signals that this layer most likely represents a fairly recent fill deposit. The leaf was corroded and therefore does not appear to be a recent intrusion.

Trench #2

Most of the samples that were processed were collected from this trench. In all, five samples were processed; these had been collected from Features 2, 3, 6, and 7 and from Level 6 of the trench. Table 9-2, below, presents a quantitative breakdown of the seeds recovered from the samples.

As the results indicate, the sample of seeds recovered from the features in Trench #2 was small. In general, the families and species represented among the seeds are what are often referred to as "Ruderals," which include most of the weeds that colonize areas disturbed by humans where "the natural vegetation cover has been interrupted" (Schmaltz 1981: 4). This large group of plants contains some of the most persistent and therefore most troublesome weeds for those engaged in agriculture or landscape maintenance. At the same time, some of these plants have also been sources of food *(Rubus,* for example*).* This large genus that includes blackberry and raspberry is a ubiquitous colonizer of disturbed ground, though its fruit is also an excellent source of sugar that has been consumed by humans since at least Neolithic times (e.g., Heer 1868; Halbeck 1970).

TABLE 9-2

PLANT MACROFOSSILS RECOVERED FROM TRENCH #2

Provenience	Seed Type	Number
Level 6	*Rubus*	1
	Daucus carota	1
Feature 2 (well)	*Rubus*	1
(Level 9D)	*Chenopodium album*	1
Feature 3 (downspout terminal box)	*Rubus*	6
(Level 8A)	*Solanaceae*	62
Feature 6 (drain/downsput)	*Rubus*	1
(Level 6)	*Chenopodium album*	2
	Compositae	1
	Vitis	1

What little evidence we have concerning the landscape of the boardinghouse yard comes from the area surrounding the well (Feature 2). Samples from the well itself contained *Rubus* and *Chenopodium* seeds. Given that both are rapid colonizers of disturbed ground, their presence in an actively-used yard is not unusual. It is interesting to note, though, that no *Rubus* pollen was found in the soil samples that were analyzed. *Rubus* and *Chenopodium* seeds were also recovered from Feature 6. The fact that this stoneware pipe is a rather late addition to the yard complex of features suggests that the *Rubus* and *Chenopodium* seeds found in the area may well be late or even modern representatives. This is somewhat disconcerting because of the presence of a *Vitis* (grape) seed in the same feature. Besides *Rubus,* the lone *Vitis* seed represents the only other plant that might have been consumed by the residents of the boardinghouse. Its presence in the feature does not, however, rule out it having been consumed by a resident, it just makes such a conclusion problematical.

The major find of the archeobotanical analysis was the discovery of 62 *Solanaceae* seeds from the bottom of Feature 3. A species identification for these specimens is difficult because of their relatively poor condition and the fact that color might have been affected by contact with ash or cinder. There is little question, however, that they are members of the *Solanaceae* family, commonly known as nightshades. This family contains such notable members as the potato and the tomato. Nightshades, however, are usually found in shaded, heavily-travelled or disturbed areas and are often found along fences. In the case of Feature 3, which may have been a downspout, nightshade may well have grown on a nearby fence, a boardinghouse wall, or on the downspout itself. One problem with any of these interpretations is the difficulty mentioned above concerning the lack of a species identification. The seeds seem to have most of the attributes of *Solanum nigrum,* black nightshade, which is an annual, but because of the problem of determining color, it is hard to differentiate between *S. nigrum* and *Solanum dulcamara,* bittersweet nightshade, which is a perennial and more common. The latter would have been a recurring component of the yardscape and is well known for its ability as a creeper. In Boston, for example, gardeners actually promote the growth of *S. dulcamara* along fences because it provides shade and adds to a fence's capacity to inhibit would-be thieves. If *S. dulcamara* is found to be more pervasive in future samples, then we may have discovered a common element of the yardscape of the boardinghouses.

Summary

The small sample that has been analyzed to date does not allow much in the way of interpretation at this time. The results do, however, indicate that data germane to the question of landscape development is present in the boardinghouse deposits. The presence of *Solanaceae* signals a human landscape, one that is common to urban areas (cf. Mrozowski in press). The aim of further research will be to expand our knowledge of Lowell's urban plant assemblages and particularly those present in the Boott Mill yard, the yard of the Kirk Street Agents' House, as well as those of boardinghouse yards. Data concerning dietary patterns and the use of plants for decorative purposes will also be sought. Although limited in scope, these initial explorations will allow us to refine the questions that will guide our continuing research.

CONCLUSION

Although limited by the small sample size, both the palynology and macrofossil analysis have provided some tantalizing insights into the nature of land-use and diet at the boardinghouses. In addition, the palynology has proved particularly informative with regard to the post-demolition history of the boardinghouses. What the results demonstrate is that interdisciplinary research is equally as applicable to the investigation of complex urban historical sites as it is for the study prehistoric contexts.

Evidence of the diet of millworkers was discovered in both the pollen and plant macrofossils. The presence of cereal pollen almost certainly reflects the consumption of grain products, given the dispersal characteristics of the pollen type (Vuorela 1973: 12; Greig 1982: 54). The absence of other palynological dietary indicators is consistent with findings from other urban localities where evidence of garden produce, if present, may be submerged in the indistinguishable pollen of related weeds. Dietary evidence among the macrofossil remains, while more specific, is less well represented in terms of pure numbers. The single grape seed found in Trench #2 is probably related to food consumption among the millworkers. Landon (Chapter 8) found no reference to grapes as part of the millworkers' diet among the documentary sources he consulted (although raisins and currants were present). Food items such as fruits might well be underrepresented in documentary sources given their secondary role in the foodways of the millworkers in comparison to things such as meats. Another fruit represented in the botanical remains from the boardinghouses was blackberry/raspberry. The presence of these wild berries is not unexpected even though they too were not mentioned in the sources noted by Landon. These berries were commonly used in ciders and in baked goods as well as as a food preservative (Brown 1966). It is also possible that berries were growing in the yards, although this seems unlikely given their small numbers in the sample.

Pollen evidence for land use was also apparent, but it is complicated by post-habitation manipulation of the deposits. During the period of initial occupation of the boardinghouses the flora of the backyards appears to have been dominated by grass. An imprecisely-dated weedy interval with reduced ground cover appears to follow, but the validity of this interpretation is dependent upon establishing the point of origin of the upper portion of the cellar fill. Pollen from Feature 8 suggests that all of the cellar fill came from the backyard, and given the artifacts associated with the feature (see Chapter 7), it appears that the weedy interval is a late 19th-century phenomenon. The macrofossil evidence concurs with these results, but it once again provides more specific information concerning the plant types that were present. The most notable elements of this weedy interval recognized in the pollen were the nightshade and Chenopodium. The large number of nightshade seeds in the sample indicates that this persistent vine may have been a prominent member of the backyard flora, probably growing along fences or downspouts.

As noted earlier, the depositional aspects of the pollen analysis were most enlightening. The results strongly suggest that the backyard was mined on perhaps two occasions to fill the cellar. Both the installation and removal of the hypothetical clothesline pole of Feature 8 also appear to be recorded in the pollen profile. This kind of information is invaluable for the archeologist who is faced with the complex stratigraphy so common in urban contexts. The fact that the fill inside the boardinghouse cellar appears to be stratigraphically reversed indicates that the backyards may still yield relatively undisturbed soils.

In our research design (Chapter 2), the urban landscape was given as one of our priorities along with other concerns such as diet and health. These results, while exploratory in nature and limited by a small sample, nevertheless point to the feasibility of conducting this kind of research in Lowell. Most important, this initial foray into archeobotanical research suggests that there are several avenues for productive work in the future. Dietary information will be forthcoming, but it seems clear that more attention will need to be paid to locating features such as privies, which have proved more productive in terms of plant remains (Reinhard, Mrozowski and Orloski 1986). More detailed information concerning the past landscape at the boardinghouses will depend upon a shift in our sampling strategies to closer sampling intervals and larger pollen counts. Although exploratory, our results indicate the kinds of data that are available and the insights that they can furnish to those interested in understanding the context and nature of urban life.

Chapter 10

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

by Stephen A. Mrozowski and Mary C. Beaudry

The objective of the initial year of the projected four-year study of the Boott Mills in Lowell has been to establish a context for further research through the examination of documentary sources and the collection of oral history. The archeological component of the study has been exploratory; its purpose has been to determine the nature and integrity of the archeological record at the site of two former Boott Mills boardinghouses. To this end, an interdisciplinary approach incorporating zooarcheological, archeobotanical, and palynological analysis with traditional archeological excavation has been employed. Our results fall into two categories: concrete data (i.e., facts about life at the boardinghouses) and tentative yet promising initial results. The latter provide grounds for confidence that the interdisciplinary approach adopted here will prove profitable both for future research on Lowell and for the development of interdisciplinary research in historical archeology in general. The goal of the first phase of the Boott Mills study has not been synthesis, and indeed much of the data remain undigested at this point. There are, however, some general observations that can be made. These are presented below along with recommendations for the direction of future phases of the Boott Mills study.

Although the operation of the Boott cotton Mills involved thousands of individuals, the main concern of the Boott Mills study has been the lives of those workers living in Boott company boardinghouses. Specific attention has been given Boott units #33-48, because the backlots of these units are available for archeological exploration. The tenor of mill workers' lives was set by their hours of toil at the service of spindles, looms, or endless yards of textiles requiring careful inspection, but work was not the only aspect of their existence. The boardinghouses no doubt were the only place most workers could call home in Lowell, and these were located mere yards from the mills that dominated their lives. The question to which we have sought an answer is: What was the texture of workers' homelives when these lives were circumscribed by the mill-controlled boardinghouse system? In seeking an answer to this question we have emphasized the value of interdisciplinary research because life in the boardinghouses was made up of a variety of elements. The various facets of "life at the Boott" have been investigated within the framework outlined in Chapter 2. The first year of research has revolved around the *Residential* issues discussed in the research design (pp. 5-7) and has focused on architectural changes and the use of both interior and exterior space at the boardinghouses, on demographic reconstruction of the boardinghouse population over time, on health and hygiene, and on foodways. Results of research within each of these problem domains are summarized below.

Architecture

In Chapter 4, Gregory Clancey provides a detailed chronology of the architectural changes at the boardinghouses. His major contribution rests in the careful analysis of cartographic and pictorial sources in order to delineate specific details of architectural change that are particularly relevant to understanding the archeological record; lack of such information in other sources makes his study especially valuable. Clancey observes that the boardinghouses were constructed using materials and methods consistent with the better commercial and industrial buildings of the era. The regularity of the streetfront appearance of the boardinghouses did not extend to the treatment of the rear yard spaces, however, as Clancey notes a great deal of variability in the construction materials and details of the rear ells for the various boardinghouses. It is unclear at this point whether variability in, for instance, construction of brick vs. wood ells was fostered by distinctions

in the treatment of different boardinghouses and their residents, and, if so, whether distinctions were based on positions of seniority or skill in the mills, on ethnicity, or other factors. Perhaps the differences were simply functional; further research, both documentary and archeological, is required to clarify this issue.

Clancey's chief concern is with the general plan of the boardinghouses and the chronology of their construction, but he also touches on the use of interior space. The renovation of the blocks facing John Street that provided them with relatively stylish mansard roofs also produced additional space in the upper floors of the units thus affected. There is no evidence, however, that this was done to improve the quality of workers' living conditions.

Tracing the changes to the boardinghouses and linking these with changes in corporate policy and company profitability has not been as clear-cut an endeavor as was expected, but it is obvious that, for the most part, the Boott Corporation's attention to its housing was of a managerial nature and was geared toward maintenance. The mansardization of the John Street blocks was the only major architectural alteration to its boardinghouses undertaken by the Boott over the course of approximately 75 years. What is more, Kelso's palynological analysis of sediments from the boardinghouse backlots (Chapter 9) reveals that maintenance of exterior space had deteriorated to such an extent by the late 19th century that the backlots were full of weeds--or at least were no better than bare patches of dirt or mud ringed by weeds along the fences and sheds.

Clancey delineates some specific avenues for additional research on the architecture of the Boott boardinghouses; a more general issue that will receive attention in the future is the spread of the boardinghouse system epitomized by the plan of the Boott Mills boardinghouses to other New England mill communities. It is perhaps only through a more comparative and synthetic approach to this issue that an interpretation of the architecture of corporate living will emerge.

Demography

Investigation into the demographic makeup of the Boott boardinghouses has provided us with a baseline upon which future research can be built. Bond's careful examination of the *Lowell Directory* and *Federal Census* data has demonstrated that it is not possible to rely on assumptions or popular myths about the composition of the boardinghouse population at any time in their history. From the very beginning, a sizable number of men lived in certain units; they were usually segregated from the units housing females, but there were units with both male and female unrelated occupants. Although the Boott units that comprise the focus of our study were never wholly converted to tenements, some units did function as single-family tenements for a time, at least. It may be possible to distinguish some differences in material culture or backlot treatment among boardinghouse and tenement units, but this seems unlikely in light of the fact that Bond's data demonstrate that the majority of tenement dwellers took in boarders as a source of extra income. Certainly this practice would blur clear-cut evidence, if there is such a thing, of single-family occupation.

Whether it will be possible to link sealed archeological deposits with the resident population of any given unit, either tenement or boardinghouse, remains unclear; Bond's data suggest, however, that should this be possible, evidence of the ethnic affiliation of a given unit may be present. Most striking in her study was the concentration of specific ethnic groups within residential units; the Poles were the most completely segregated of any immigrant group that lived in the Boott boardinghouses. Since the first step in this operation is to locate sealed deposits that can be dated to discrete spans of time, more archeology is called for.

Bond's research has peopled the Boott boardinghouses, and, what is more, her interview with Blanche Graham, an early 20th-century boardinghouse resident, has helped to infuse life into dry statistics and lists of names. Blanche's childhood memories of the boardinghouse in which she lived provide a different perspective than that of an adult; in many ways, her participation in the

daily activities at the boardinghouse prove more valuable than would the recollections of an adult who worked all day in the mills. Through Blanche's memories and through Bond's analysis of a rare photograph of a boardinghouse dining room, we learn of the boardinghouse keeper's routines, of the sorts of dishes, glassware, and so forth that were purchased, and of the ways in which the interior spaces of the boardinghouse were used and furnished. Most interesting in this regard is Blanche's revelation of the social segregation of male and female "public" space within the boardinghouse. This is a somewhat unexpected development, as it seemed natural to assume that public areas, such as the reception room in the Croteau's boardinghouse where the men played cards, would have been shared social space.

We have yet to learn in what ways company policy (i.e., against drinking) influenced off-hours interaction at the boardinghouses. Company correspondence reveals that drunkeness was a recurrent problem; it is likely that most individuals inclined to drink frequented local establishments away from the Boott property--this would still mean that people came home in a state of intoxication. The archeological remains suggest, however, that a great deal of on-site drinking took place. It will prove interesting to pursue this issue and others relating to the effects of corporate paternalism on people's leisure-time activities through additional documentary and archeological research.

Health, Hygiene, and Sanitation

Bell's examination of health, hygiene, and sanitation at the boardinghouses has generated a wealth of information concerning the support systems so critical in cities. Even more important, however, is Bell's ability to articulate the relationship between changes in the policy of corporate paternalism and sanitary conditions at the boardinghouses. There seems little question that as profits dipped, so too did the concern on the part of the corporations for maintaining facilities such as the boardinghouses. At a more practical level, Bell has also found good evidence for the establishment and continued use of privies at the boardinghouses well into the 20th century.

The health of any population is a sensitive and significant barometer of the overall conditions of life. In the boardinghouses owned by the Boott Mills Corporation, sanitary conditions declined over time. These changes would certainly have been noticed by workers, while the source of any ill health they may have experienced probably remained a mystery. This is one of the reasons that pursuing the topics of health, hygiene, and sanitation is critical to the overall goals of the study. We cannot hope to fully understand what life at the boardinghouses was like unless we are aware of the conditions of health and general well being in which the workers lived. In this vein, Bell's research forms the baseline for parasitological analyses planned for upcoming phases of the Boott Mills study.

The archeological manifestations of health and hygiene at the Boott boardinghouses go beyond the possible presence of parasites in well or privy fill, however. As Bell notes in Chapter 6, the documentary record tends to portray the *ideal,* that is, the image that the corporations wanted to project. Archeological investigation of the boardinghouse backlots will reveal the extent to which reality reflects this ideal. The results of palynological analysis described above suggests that hygienic conditions were not maintained during the latter part of the 19th century. The fact that corporations delayed installing up-to-date sanitary facilities and pipes bringing safe drinking water into their boardinghouses until ordered to do so by local agencies such as the Board of Health serves as an indication that corporate concern for worker welfare was linked more closely to public image than it was to action.

Foodways

Landon's study of foodways at the Lowell boardinghouses (Chapter 7) makes excellent use

of historical sources to provide a context for his analysis of the rather limited sample of faunal remains recovered from the initial test excavations at the Boott boardinghouses. Particularly noteworthy is his consideration of decision-making among boardinghouse keepers in terms of cuts of meat purchased. By comparing the empirical evidence of the archeological sample with the documentary sources, from which he constructed a relative pricing structure for 19th-century meats, Landon demonstrates that boardinghouse foodways are best viewed in terms of *economizing measures*. In so doing, he is able to interpret the small faunal sample within a framework that applies to boardinghouse foodways in general. Exploratory archeobotanical research by Mrozowski (Chapter 9) suggests that further macrofossil analysis will augment the documentary record of boardinghouse foodways.

Viewing boardinghouse foodways from an economizing perspective makes it possible to link other problem domains of the Boott Mills study with the zooarcheological analysis. As Landon points out, Bond's discussion in Chapter 5 of the boardinghouse keepers' pattern of purchasing furnishings and eating and serving utensils in bulk, at wholesale prices, shows that economizing measures extended to every aspect of running a boardinghouse. The implications for archeological analysis are clear: boardinghouse residents for the most part did not own the ceramics or glassware that found their way into the archeological record, so these materials *cannot* be used as indicators of their socioeconomic status, skill level at work, or consumer choices.

The archeological record contains the by-products of the boardinghouse system; the architecture and utilities were controlled by the corporations, which also controlled to a great extent who could live in the boardinghouses. Boardinghouse keepers were responsible for purchasing or renting everything needed to furnish a house and to feed its occupants. They undertook to economize in every way possible in order to make a profit. As company correspondence reveals, boardinghouse keepers often risked bending the rules (e.g., by renting to people who were not Boott employees) in order to keep on a sound financial footing.

Just as documents reveal that boardinghouse keepers did not always adhere strictly to company rules, the preliminary analysis of artifacts recovered from the fill of one of the Boott wells shows that there were many ways in which boardinghouse keepers and workers sought to personalize their surroundings and to exercise control over their own lives. The evidence for consumption of alcoholic beverages (e.g., liquor, wine, and beer bottles, beer mugs, wine glasses) speaks of rather flagrant violation of one rule the corporation never relaxed. Various personal items reveal leisure-time activities and the presence of children (e.g., marbles, doll fragments, etc.). Perhaps most poignant is the abundance of flowerpot fragments in this late 19th-century deposit. Here indeed is evidence of an attempt to control and perhaps embellish at least portions of an otherwise monotonous and highly-regulated existence.

Subsequent phases of the Boott Mills study will continue the examination of the lives of millworkers through an interdisciplinary project incorporating archeological excavation and documentary research with architectural history, material culture research, palynology, parasitology, archeobotany, and zooarcheology. Comparative data from the Massachusetts Corporation Agent's House will provide a perspective on the lifestyle of the family of a mill executive, and analysis of archeological work in the Boott millyard will offer a perspective on the industrial complex that formed the core of the Boott "community." Results of the initial year of the Boott Mills study hold out the promise that our interdisciplinary approach will make it possible to recover the lives of ordinary millworkers from the anonymity produced by industrial capitalism and the boardinghouse system.

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APPENDIX A

ANNOTATED LIST OF MAPS AND PHOTOGRAPHS PERTAINING TO THE BOOTT MILLS HOUSING

by Gregory K. Clancey

A Note on Archival Work

I have searched through all of the collections listed below thoroughly, with the exception of the later Locks & Canals photographs, for which I have identified my cut-off date. The two collections of maps grouped under "Proprietors of Locks and Canals" are but two organized components of a vast number of uncatalogued maps in the basement vault of the Boott Mill office. This collection, while predominantly technical in nature, would be worth investigating more deeply.

Other collections that I have scoured unsuccessfully include the photograph, stereoview, and postcard collections of the S.P.N.E.A., the stereoview collection of the American Antiquarian Society, and the postcard collection of the University of Lowell Library. The Special Collections of the Lowell Public Library claims to be merely duplicative of the University of Lowell Library holdings, but some additional browsing there might prove fruitful.

The City of Lowell's Tax Assessing Office does not have early tax-assessing photographs, drawings, or other records. Such information was gathered for this office in the 1930s but was subsequently destroyed.

Other potential sources of information that were not checked because of time constraints include the Boston Public Library's Photograph Collection and the Massachusetts Historical Society collections.

Maps and Plans

1835 (Nov. 19)	Middlesex County Deeds, Southern Registry, Book 36, Plan 17. Or Northern Registry, Book 3, Plan 5. Four original mill buildings with sixteen blocks of boarding houses and woodsheds, all projected. No details.
1839 (Nov.)	Middlesex County Deeds, Southern Registry, Book 45, end page. Massachusetts Mill yard, incidentally shows three Boott boarding houses and vacant lot French-George-Paige St. No detail.
1844	Middlesex County Deeds, Northern Registry, Locks and Canals Plans, Book 00, "Catalogue of 113 Lots . . . Belonging to the Proprietors of Locks and Canals . . . which will be Sold at Auction Apr. 15, 1845. . ." Plan 1. Area bounded by Merrimack Canal-Merrimack River-Eastern Canal-Merrimack St. No detail.
1844	Lowell City Engineer's Office, Map Vol. 10, 2, 9, "Plan of Land between French and Paige St., no buildings except Massachusetts Mill boarding houses.
1850	Plan of Lowell, Sidney & Neff. Wall map of entire city, buildings with no details.
1862 (Jan. 1)	Proprietors of Locks and Canals, Mill Yard Plans (4651-4670), Plan 4656, "Location of the Reservoir Pipe in the Yard of the Boott Cotton Mills." Buildings with no details.
1876	Bird's-Eye View of Lowell, Massachusetts, Bailey & Hazah. Buildings with details, detail not always accurate.
1878	Plans of Mill yards of Manufacturing Companies of Lowell, Parties to Mutual Insurance. Buildings with details.

1879	Altas of the City of Lowell. Buildings with details.
1882	Sanborn Insurance Map, Lowell, corrected Feb., 1888. Buildings above French St. illustrated partially and without detail, those below French St. in detail.
1882 (Nov. 24)	Barlow Insurance Map, Boott Mills. Buildings with few details, leaves out existing ells.
1888 (May 19)	Lowell City Engineer's Office, Map vol. 10, 2, 41. Buildings with details.
1892	Sanborn Insurance Map, Lowell, Sheet 11. Buildings with details.
1892	Atlas of the City of Lowell, L.J. Richards & Co. Plate 1. Buildings with details.
1896 (April)	Proprietors of Locks and Canals, Boott Cotton Mill Plans (Shelf 153), No. 7, "Plan of the Mill Yard of the boott cotton Mills." Buildings with details.
1898	Middlesex County Deeds, Northern Registry, Book 17, page 19, "Plan of Land in Lowell, Mass. Surveyed for Saiman Sirk." Buildings below French St., between John and Kirk.
1906	Atlas of the City of Lowell. L.J. Richards Co. Buildings with details.
1907	Sanborn Insurance Map, Lowell, Vol. 2, Sheet 108, corrected 5/1944, 7/1946, 12/1948, 7/1951. Buildings in detail, one undated correction sheet included.
1921 (Feb.)	Associated Mutual Insurance co Plan, Boott Mills. Bird's-eye view of mills, only block converted to cotton storehouse fully illustrated.
1922	Lowell City Engineer's Office, Map Vol. 10, 70, "Plan of Land Belonging to Paige St. Baptist Church." Illustrates block French-John-Paige-Brookings.
1924	Atlas of the City of Lowell, Richards Map. Co. Buildings with details.
1928	Proprietors of Locks & Canals, Boott Cotton Mills Plans (Shelf 153), No. 25-11, "Plan Showing Boott Mills Property as of 1928" (drawn 1929). Buildings with details.
1929 (May)	Proprietors of Locks & Canals, Boott cotton Mills Plans (Shelf 153), No. 98, "Plan Showing Real Estate. . .Belonging to the Boott Mill." Buildings with details, demolition notations penciled in, Revised copy included, Nov. 4, 1936.
1931 (July)	Proprietors of Locks & Canals, Boott Cotton Mills Plans (Shelf 153), No. 123, "Plan of Property at Corner of French and Brookings Streets, Belonging to Boott Mills." Floorplan of three proposed units in above location (Nos. 86 & 88 French and 19 Brookings).
1931 (July 28)	Proprietors of Locks & Canals, Boott Cotton Mills Plans (Shelf 153), No. 116. Pencil drawings of proposed Parchert Service Station corner French and Brookings, Henry Prescott Graves, architect.
1936	Atlas of Lowell, Massachusetts, Franklin Survey Co. Buildings with some detail.
1956 (June)	Middlesex County Deeds, Northern Registry, Book 87, page 158, "Plan of Land Belonging to Boott Mills, surveyed June, 1956." Ownership of lots shown but no buildings.

Photographs

George Kengott, *The Record of a City*, 1912, Photograph 15, page 45. Ends of three rows on Amory Street.

University of Lowell Library, Special collections, Photographs, Saiman Sirk Building (3). Shows additional blocks obliquely.

University of Lowell Library, Special Collections, Locks and Canals Photograph Collection. I have reviewed the first 2,649 of these 3,299 photographs and have discovered the following.

1734-A Associated Mutual Insurance Company Map, Boott Mill Complex, February 4, 1921. Photograph of map.

1735 Ibid., Part II.

1789-A Boott (Eastern) Canal from Bridge St., Dec. 19, 1921, showing roofs of three blocks over railroad cars.

2090 View up John St. from Boott Millyard Bridge, Aug. 9, 1924, showing entire facades of both blocks on John St.

2173 Eastern Canal and canal wall in front of Boott Mill, looking upstream, Mar. 8, 1926, showing end unit of one block over railroad car, woodshed visible.

2224 Untitled. Photo printed backwards. Shows Eastern Canal from same perspective as above, same block visible, woodshed visible.

2225 View from the east of the Boott Mill boardinghouses along the Eastern Canal, 1926, showing the ends of four boardinghouse blocks.

2284 Untitled. Shows roof of end unit of one block over railroad cars, probably 1926.

2379 Boott Mills looking East, Mar., 1928, showing most of mill complex with ends of all blocks on extreme right side.

2418 Opening in Eastern Canal wall to let in water from the Boott penstock, Oct. 15, 1928, showing ends of four blocks over canal wall.

2463 John St. from Paige St. looking toward Boott Mills, June 18, 1929, showing end wall of French St. block and John St. blocks in distance at oblique angle.

2461 French St. from John St. towards the Merrimack Canal, 1929, showing the French St. block and the ends of the Sirk St. blocks.

2632 Parchert Service Station, 1931, showing rear of John St. block.

2633 Parchert Service Station, 1931, showing rear of Brookings St. block.

3135-A Boott Mill complex from air, 1939, showing one John St. block still standing.

Appendix B

Census Data and Directory Information
compiled by Kathleen H. Bond

1838

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	POLLY EVANS, WIDOW	
	CYRUS K. MORRILL	
34A	MARY W. WATSON	BOARDINGHOUSE
	JAMES W. FRENCH	OVERSEER
	EDWIN CLARK	
B	JAMES HOPKINS	OVERSEER
35	RHODA JONES, WIDOW	BOARDINGHOUSE
	CHARLES GILES	HOUSEWRIGHT
36	FANNY SARGENT, WIDOW	BOARDINGHOUSE
37	CATHARINE CROWELL, WIDOW	BOARDINGHOUSE
	JOSEPH BROWN	
38	SARAH QUIMBY	BOARDINGHOUSE
	ISAAC COLBY	CORDWAINER
	TRUE W. BROWN	HOUSEWRIGHT
39	ROBERT A. THOMPSON	OVERSEER
	JOHN CHASE	
	JAMES C. FOGG	
	CLARK PLACE	CLERK 57 MERCHANT ST.
40		
41A	HERMAN PROCTOR	MACHINIST
B	JOSEPH B. WHITE	
42		
43		
44	RICHARD GILMAN	BOARDINGHOUSE
	JOHN FRENCH	
	SETH S. GILMAN	
	GEORGE D. LUND	MACHINIST
45A	LOUIS HULL (?), WIDOW	BOARDINGHOUSE
	(Probably Louisa Hall, Head of this unit in 1839)	
B	SARAH WHITTIER, WIDOW	BOARDINGHOUSE

1838

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
46	JOHN B. WARREN	OVERSEER
	ISAAC BARRETT	
	WILLIAM H. FLAGG	MACHINIST
	ISAAC PLACE	
	CHARLES WOOD	
47	CHARLES L. WILSON	OVERSEER
48	ASA HILDRETH	OVERSEER

1839

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	EZEKIEL BLAKE	OVERSEER
34	JOHN PHILBRICK	OVERSEER
	JOHN MELLON	WATCHMAN/OVERSEER
35	MARY BAMFORD, WIDOW	BOARDINGHOUSE
36	FANNY SARGENT, WIDOW	BOARDINGHOUSE
37	CATHERINE CROWELL, WIDOW	BOARDINGHOUSE
38	SARAH QUIMBY	BOARDINGHOUSE
	ISAAC COLBY	CORDWAINER MIDDLE ST. OPP. P.O.
39	MARY STEARNS	DRESSMAKER
	CYRUS COBURN	
40	WILLIAM HALE	
41	ENOCH PARKER	OVERSEER/BLACKSMITH
42	DAVID Y. BICKFORD	OVERSEER
43	NASON C. MARTIN	BOARDINGHOUSE
	CALVIN C. KNOWLES	
	BURKLEY WILLIAMSON	
44	ANN F. BROWN	BOARDINGHOUSE
	WILLIAM L. BROWN	
	LEVI ROBY	
45	LOUISA HALL, WIDOW	BOARDINGHOUSE
46	JOHN B. WARREN	OVERSEER
	RUFUS CHILDS	
	IRA D. HIBBARD	
	NEHEMIAH OSGOOD	
	ISAAC PLACE	
	DANIEL REED	HAMILTON MILLS
47	JONAS REED	TEAMSTER
	CHARLES G. GILES	
48	ASA HILDRETH	OVERSEER
	ARTHUR MAXFIELD	

1841

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33A	EZEKIEL BLAKE	
B	ERASTUS BRIDGE	
34	RUFUS MELVIN	
35	MARY BAMFORD, WIDOW	BOARDINGHOUSE
	COLUMBUS DAVIS	
36	FANNY SARGENT	BOARDINGHOUSE
37		
38	SARAH QUIMBY	BOARDINGHOUSE
	ISAAC COLBY	SHOEMAKER
39A	ROBERT THOMPSON	
B	EZRA ADAMS	
40	WILLIAM HALE	
	DUDLEY H. SMITH	
	JOHN WILSON	
41	WILLIAM STEBBINS	
42	ALAN HOUGHTON	
43	LOVEY OTIS	
44	ELIZA LUFKIN	
45	JOSIAH WYMAN	YEOMAN
46	JOHN B. WARREN	
	ALBENUS PHILBRICK	
	THOMAS SAGE	
	CHARLES WOOD	
	FRANCIS ABBOTT	
	ISAAC BARRETT	
	JOSEPH CHASE	
	GEORGE H. HOLT	
	GEORGE H. HUBBARD	PAINTER
	DUSTIN T. KENDALL	

1841

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
47	CHARLES L. WILSON CYRUS W. WILSON	
48	ASA HILDRETH DANIEL M. REED ARTHUR MAXFIELD	MERCHANT

1842

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	HUMPHREY S. WATSON	
	ALBINUS PHILBRICK	OVERSEER
34	RUFUS MELVIN	OVERSEER
35	MARY BAMFORD, WIDOW	
	DANIEL M. BAMFORD	
	CYRUS TOWNS	
36	MRS. FANNY SARGENT	
37	MIRIAM B. STRAW	
38	SARAH QUIMBY	
	CHASE COLBY	
39	MOODY CAVENDER	WATCHMAN
	ROBERT THOMPSON	
40	HENRY P. CLOUGH	
41	WILLIAM STEBBINS	COUNTING ROOM
42	JOSEPH A. HODGES	
	ALVIN HOUGHTON	OVERSEER
43	THOMAS W. PRESSEY	
44	MISS ELIZA LUFKIN	
45	JOSIAH A. WYMAN	
46	JOHN B. WARREN	OVERSEER
	FRANCIS B. ABBOTT	
	ISAAC BARRETT	OVERSEER
	F.M. FOLMSBURY	
	CHARLES G. GILES	
	BURKLEY WILLIAMSON	
	TIMOTHY D. KENDALL	
	THOMAS LANDREDGE	
	THOMAS SAGE	
	CHARLES OSGOOD	
	NEHEMIAH OSGOOD	
	CHARLES WOOD	
	WILLIAM WOOD	

1842

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
47	HENRY WIGGIN	MACHINST
48	ASA HILDRETH	OVERSEER

1844

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	JOSIAH OSGOOD	OVERSEER
34	RUFUS MELVIN	
35	MRS MARY BAMFORD	
36	MRS. FANNY SARGEANT	
37	MIRIAM B. STRAW (?) (Listed in Directory at #73, but it is possibly a misprint)	
38	MISS SARAH QUIMBY ISAAC C. COLBY	
39	MOODY CAVENDER	
40A	HENRY P. CLOUGH	OVERSEER
B	CYRUS W. WILSON	
41	WILLIAM STEBBINS	
42A	NEHEMIAH OSGOOD	
B	CHARLES WOOD	
43	MRS. ESTHER DREW EZRA DREW	
44	MISS ELIZA LUFKIN	
45	MRS. CLARISSA COBURN	
46	DANIEL PARKER JOHN B. WARREN CALVIN CLARK TIMOTH D. KENDALL THOMAS LANGRIDGE NATHAN LEATHERS ROBERT LEATHERS SAMUEL LEATHERS THOMAS MAGILTON	BAKER AT YOUNG AND MASON'S OVERSEER CLERK AT GROCER'S CO. CARPENTER AT DODGE'S
47	CHARLES L. WILSON	OVERSEER
48	ASA HILDRETH ISAAC BARRETT	OVERSEER OVERSEER

1845

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33A	JOSIAH OSGOOD	OVERSEER
B	KIMBAL FARNUM	
34	RUFUS MELVIN	OVERSEER
35	MRS. MARY BAMFORD	
36	MRS. FANNY SARGENT	
	MISS. R. WHEELER	DRESSMAKER AT 21 CENTRAL
	(R. Wheeler was listed as a boarder)	
37A	MRS. MIRIAM B. STRAW	
	L.H. STRAW	CLERK AT H.J. BAXTER'S
	JOHN B. STRAW	CLERK AT 150 MERCHANT STREET
B	JAMES T. HARDY	OVERSEER
38	MISS SARAH C. QUIMBY	
	ISAAC C. COLBY	
39	C. TOWNS	OVERSEER
40	H.P. CLOUGH	OVERSEER
41	WILLIAM STEBBINS	BOOTT COUNTING ROOM
42	CHARLES WOOD	
43	MRS. ESTHER DREW	
44	MISS ELIZA LUFKIN	
45	MRS. CLARISSA FOX	
46	DANIEL PARKER	
	DAVID P. FORD	
	_____GOULD	
	THOMAS MAGILTON	
	SOLOMON SAUNDERS	
	JOHN B. WARREN	OVERSEER
	D. WHEELER	
	DON WHEELER	
	JOHN A. WILLIAMS	OVERSEER
	WHEELER WILSON	
47	G.D. LUND	OVERSEER
48	ASA HILDRETH	OVERSEER

NO:	NAME:	OCCUPATION:
33A	WILLIAM HALE	OVERSEER
B	THOMAS MAGILTON	
34	RUFUS MELVIN	BOOTT REPAIR SHOP
35	PARKER WINN JOSEPH WINN	BOARDINGHOUSE
36	MRS. FANNY SARGENT MRS. RACHEL A. ALLEN (Rachel Allen was listed as a boarder)	BOARDINGHOUSE NURSE
37	MRS. MIRIAM A. STRAW	BOARDINGHOUSE
38	MISS SARAH C. QUIMBY	BOARDINGHOUSE
39		
40	HENRY P. CLOUGH MORRIS PALMER	OVERSEER
41	WILLIAM STEBBINS	
42A	CHARLES WOOD CHARLES C. DREW JAMES B. MARSTIN WILLIAM STANLEY	OVERSEER
B	ABNER H. FLANDER	
43	MRS. ESTHER DREW ISRAEL DREW	BOARDINGHOUSE LOWELL MACHINE SHOP
44	MISS MARTHA LUFKIN	BOARDINGHOUSE
45	MRS. AMANDA FOX	BOARDINGHOUSE
46	JOHN B. WARREN LEVI FERGUSON LEONARD JEWELL GEORGE K. PAUL ALBERT J. STIMPSON ELISHA WINCH WILLIAM WOOD	OVERSEER
47	PHINEHAS JONES GEORGE D. LUND	OVERSEER
48	ASA HILDRETH	OVERSEER

1849

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	WILLIAM HALL	
34	RUFUS MELVIN	
35	PARKER WINN	SHOEMAKER AT KITTREDGE'S/ BOARDINGHOUSE
36	MRS. MARY B. BAKER	BOARDINGHOUSE
37	MRS. MIRIAM B. STRAW	
38	SARAH QUIMBY (Also listed as Keeper of 27 Boott)	BOARDINGHOUSE
39	ISRAEL H. PARKER	
40	MOSES E. PALMER FREDERICK A. SPOFFORD	
41	WILLIAM STEBBINS RUEL WESTON	
42	HENRY ASHLEY ELHANAN W. SARGENT	
43	MRS. ESTHER DREW	BOARDINGHOUSE
44	MISS MARTHA LUFKIN	BOARDINGHOUSE
45	MRS. AMANDA FOX	
46	JOHN B. WARREN	
47	MARK DOE	
48	PLINY LITCHFIELD DANIEL WOODIES	

1851

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	WILLIAM HALL	OVERSEER
34	RUFUS MELVIN	OVERSEER
35	PARKER WINN	SHOEMAKER/BOARDINGHOUSE
36	MRS. MARY B. BAKER	BOARDINGHOUSE
37	MRS. MIRIAM B. STRAW LEVI H. STRAW	BOARDINGHOUSE
27 and 38	SARAH QUIMBY	BOARDINGHOUSE
	STURGIS DAVIS EDWIN LEYBURN GEORGE MICKLES	AT WARD AND THOMPSON'S
	JOSEPH O'DELL THOMAS BURNS ABEL CLARK A. C. F. COLBY ISAAC COLBY	
39A	JAMES STARBIRD	
B	GEORGE W. WILL	
40A	DANIEL R. WALLACE	
B	RUEL L. WESTON	
41	WILLIAM STEBBINS	
42A	HENRY ASHLEY	
B	ALHENANT W. SARGENT	
43		
44	MARTHA LUFKIN	BOARDINGHOUSE
45	MRS. AMANDA M. FOX	BOARDINGHOUSE
46	JOHN B. WARREN	OVERSEER
47	MARK W. DOE	
48	PLINY LITCHFIELD	

1853

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33		
34	RUFUS MELVIN	OVERSEER
35	PARKER WINN	SHOEMAKER/BOARDINGHOUSE
36		
37	MRS. MIRIAM B. STRAW	BOARDINGHOUSE
38 & 40	SARAH QUIMBY	BOARDINGHOUSE
	ISAAC COLBY	
	ASA F. COLBY	CLERK AT D. FARRINGTON'S
	EDWIN GOODRICH	
	EPHRAIM KEIZER	
	ALBERT BRAUN	
	JOHN BUTLERS	MASON
	JOSEPH ENSIGN	
	ALVIN FRENCH	
	GEORGE NICHOLS	CLERK
	THOMAS NICHOLS	CLERK
39		
41	WILLIAM STEBBINS	
42	HENRY ASHLEY	
	STURGIS J. DAVIS	
43	MRS. ESTHER DREW	BOARDINGHOUSE
44	MARTHA LUFKIN	BOARDINGHOUSE
45	MRS. AMANDA M. FOX	BOARDINGHOUSE
46	JOHN B. WARREN	OVERSEER
47	D. S. WOODIES	
48	PLINY LITCHFIELD	

1855

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33		
34	HENRY B. THOMPSON	BOARDINGHOUSE
35	MARY B. BAKER SAMUEL R. BAKER	BOARDINGHOUSE
36	MISS NANCY CALEF	BOARDINGHOUSE
37	HIRAM HERSEY LUCY A. CHAMBERLIN	BOARDINGHOUSE
38 & 40	SARAH C. QUIMBY ISAAC C. COLBY FRANK HORLUN ROBERT PEARSON	
39A	CHARLES E. MILLER	
B	THOMAS CRAGGY	
41A	JAMES STARBIRD	
B	JAMES STAFFORD	
42	JOSEPH S. GREEN	
43	NO HEAD LISTED ALANSON SHOREY WILLIS ATKINS CHARLES T. SUMNERS	
44	ABNER H. FLANDERS ORAMEL SHEPARD	BOARDINGHOUSE PAINTER
45	MRS. AMANDA FOX	BOARDINGHOUSE
46	JOHN B. WARREN JOHN ASHTON	OVERSEER LOWELL MILLS
47	D. S. WOODIES	
48	PLINY LITCHFIELD	

1859

LOWELL DIRECTORY

NO:	NAME:	OCCUPATION:
33	GEORGE E. LEONARD	MACHINIST
34		
35	ISRAEL A. WESTON	
36	MISS NANCY CALEF	
37	HIRAM HERSEY	
38 & 40	SARAH C. QUIMBY	
	HORACE W. WOODBURY	MACHINIST
	ALBERT W. SIMPSON	PRINTER AT 28 MERRIMACK
	SAMUEL PEARSONS	
	JUDSON A. WESTON	PRINTER AT PENHALLOWS
	ALBION D. BARRETT	PRINTER OFF COURIER
	WILLIAM COGGIN	J. T. GOVE & CO.
	DANIEL W. MANNING	MACHINIST AT APPLETON
	JOHN SMITH, JR.	
39A	JEREMIAH TASKER	
B	MRS. PALMER, widow	
41	JAMES STARBIRD	
42	JOSEPH S. GREEN	MACHINIST AT BOOTT
	CHARLES CURRIER	MUSICIAN
43	RUEL L. WESTON	
44	AURELIA A. AUSTIN	
	ALBION CALL	LOWELL MACHINE SHOP
	SAMUEL L. MASON	JOB WAGON
45	AMANDA M. FOX	
46	JOHN B. WARREN	
	GEORGE K. WARREN	DAGUERREAN AT 100 MERRIMACK
47	HORACE B. FRENCH	
	OLIVER A. BUZZELL	BOOKSTORE AT 29 CENTRAL
48	DANIEL S. WOODIES	MACHINIST

1840

FEDERAL CENSUS

NO:	NAME:	NAME OF BOARDERS:	OCCUPATION:
33	EZEKIEL BLAKE (in Directory not census)		OVERSEER
34	RUFUS MELVIN 1 MALE 30-40 2 FEMALES 20-30		OVERSEER
35	MARY BAMFORD, WIDOW 1 MALE 15-20 8 FEMALES 15-20 7 FEMALES 20-30 1 FEMALE 30-40 1 FEMALE 50-60		BOARDINGHOUSE
36	FANNY SARGENT, WIDOW 1 MALE 15-20 5 FEMALES 15-20 18 FEMALES 20-30 2 FEMALES 30-40 1 FEMALE 40-50 1 FEMALE 50-60		BOARDINGHOUSE
37	MIRIAM B. STRAW, WIDOW 2 MALES 10-15 1 FEMALE 0-5 10 FEMALES 15-20 26 FEMALES 20-30 1 FEMALE 30-40		BOARDINGHOUSE
38	SARAH QUIMBY 1 MALE 50-60 1 MALE 40-50 1 FEMALE 10-15 10 FEMALES 15-20 27 FEMALES 20-30 1 FEMALE 30-40	ISAAC COLBY	BOARDINGHOUSE
39A	ROBERT THOMPSON 1 MALE 20-30 1 FEMALE 0-5 1 FEMALE 20-30		OVERSEER
B	EZRA ADAMS 1 MALE 60-70 1 FEMALE 20-30 1 FEMALE 40-50		

1840

FEDERAL CENSUS

NO:	NAME:	NAME OF BOARDERS:	OCCUPATION:
40A	GEORGE TRIPP (In Directory, not census)		
B	WILLIAM HALE 1 MALE 0-5 1 MALE 5-10 3 MALES 20-30 1 FEMALE 20-30 1 FEMALE 30-40		OVERSEER
41	HERMAN PROCTOR (In Directory, not census)		OVERSEER/BLACKSMITH
42	ALVIN HOUGHTON 1 MALE 30-40 1 FEMALE 20-30		OVERSEER
43	NASON C. MARTIN (In Directory, not census)		BOARDINGHOUSE
44A	ELIZA LUFKIN 12 FEMALES 15-20 15 FEMALES 20-30 6 FEMALES 30-40 1 FEMALE 40-50 1 FEMALE 60-70		BOARDINGHOUSE
B	RUTH H. FRYE 1 FEMALE 10-15 3 FEMALES 15-20 28 FEMALES 20-30		BOARDINGHOUSE
45			
46	JOHN B. WARREN 1 MALE 5-10 1 MALE 10-15 1 MALE 15-20 1 MALE 20-30 1 MALE 30-40 1 FEMALE 20-30 1 FEMALE 30-40	CHARLES G. GILES DUSTIN KENDALL GEORGE F. KENDALL THOMAS KENDALL LYMAN LOCK NEHEMIAH OSGOOD NOAH ROBY CHARLES WOOD	OVERSEER

1840

FEDERAL CENSUS

NO:	NAME:	NAME OF BOARDERS:	OCCUPATION:
47A	SAMUEL F. DRESSER (In Directory, not census)		STONE MASON
		EPHRAIM W. SMITH	STONE LAYER
		ISAAC PLACE	
		JOHN TRULL	STONE LAYER
		OLIVER WHITTIER	STONE LAYER
B	JOHN MELLON (In Directory, not census)		OVERSEER/WATCHMAN
48	ASA HILDRETH		OVERSEER
	1 MALE 10-15	ARTHUR MAXFIELD	
	1 MALE 20-30		
	1 MALE 30-40		
	1 FEMALE 30-40		

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION	BIRTH:
27 and 38	SARAH E. QUIMBY	43	F	KEEPER	NH
	I.C. COLBY	50	M	MANUFACTURER	NH
	SUSAN COLBY	21	F		
	A.F. COLBY	19	M	CLERK	MA
	ELLEN KELLEY	20	F		IRE
	CATH WARD	25	F		IRE
	MARY DAILY	18	F		IRE
	S. BLACKMAN	32	F		NH
	S. OSGOOD	22	F		NH
	L. COVNER	19	F		NH
	A. HANDLEY	20	F		MA
	C. DROELLEY	22	F		MA
	MARY DROELLEY	22	F		MA
	MARY NICHOLS	27	F		NH
	MARY HATHERN	25	F		MA
	EMMA GRIFFIN	25	F		NH
	CAROLINE KENNEY	22	F		NH
	NANCY MOORE	18	F		MA
	A. BRIGHAM	25	F		NH
	ANN GIBSON	34	F		NH
	H. MARSH	25	F		VT
	E. JOHNSON	25	F		NH
	JULIA MARSH	25	F		NH
	C. THOMAS	21	F		MA
	MARY JONES	19	F		VT
	MRS. LEAVETT	30	F		MA
	MARTHA SMITH	22	F		NH
	ELISIE SMITH	19	F		NH
	H. SMITH	20	F		NH
	H. ROBINSON	22	F		VT
	PAULINICE LEWIS	22	F		MA
	SARAH PALMER	19	F		NH
	EMILY KIMBALL	20	F		NH
	MARY WHITTIER	24	F		NH
	M.C. HOLMES	22	F		ME
	ANN CAP	22	F		ME
	SARAH FARGO	18	F		ME
	NANCY HOLMES	18	F		ME
	PHILENA DODGE	22	F		VT
	LYDIA DODGE	24	F		VT
	ELLEN LEIGHTON	20	F		ME
	E. EATON	19	F		ME
	ANN J. TIBBETT	15	F		ME
	H. PALMER	21	F		NH
	MARY PROCTOR	21	F		NH
	M. THOMPSON	16	F		MA
33	WILLIAM HALL	45	M	MANUFACTURER	MA
	DOLLY HALL	37	F		MA
	GEORGE W. HALL	8	M		MA
	ABBY HALL	2	F		MA
34					
35	PARKER WINN	52	M	SHOEMAKER	NH
	ELVIRA WINN	44	F		NH

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	GEORGE WINN	14	M		NH
	MARY E. WINN	10	F		NH
	JAMES ORRIN WINN	7	M		MA
	CHARLES HENRY WINN	2	M		MA
	JOANNA COTLIN	46	F		IRE
	MARGARET COTLIN	35	F		IRE
	MARTHA MARSHALL	21	F		NOVA
	ELIZABETH MARSHALL	24	F		NOVA
	MARY TODD	23	F		IRE
	BRIDGET CALLIHAN	18	F		IRE
	ELLEN DRISCOLL	21	F		IRE
	JANE FLETCHER	22	F		VT
	SARAH STREETER	24	F		VT
	MARY CUDDIHE	20	F		IRE
	KATH CUDDIHE	24	F		IRE
	ANN CLARK	21	F		IRE
	HANNAH WEATWORTH	19	F		MA
	ALMIRA COLBY	18	F		MA
	MARY A. MCGERRY	19	F		MA
	ELVIRA MCGERRY	19	F		MA
	SYBEL FORD	20	F		VT
	SARAH TAVILLON	24	F		ME
	EMILY TAVILLON	17	F		ME
	HANNAH ELLSWORTH	21	F		ME
	MARY SCSHAY	16	F		IRE
	SOPHRONA BILLINGS	23	F		MA
	MARGARET ADAMSON	23	F		NOVA
	MARGARET LYNCH	21	F		IRE
	CAROLINA TILLOTTSON	19	F		ME
	SARAH DRESSER	25	F		ME
	SARAH FORD	16	F		VT
	MARY ANN MORAN	19	F		IRE
	MARY MCCARTY	17	F		IRE
	MARY WATSON	20	F		ME
	HULDAH SMITH	22	F		ME
	LUCY RAYMOND	18	F		ME
	EMILY RAYMOND	22	F		ME
36	MARY B. BAKER	37	F		NH
	SAM R. BAKER	17	M	CLERK	NH
	GEORGE W. BAKER	12	M		MA
	H.H. CARR	35	F		NH
	S.J. HARDY	23	F		NH
	H. BARKER	30	F		NH
	H. MCCOY	30	F		NH
	M.M. LATHE	23	F		NH

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	ANN HOVEY	27	F		VT
	LYDIA RICKER	28	F		VT
	ELISABETH VICKERY	21	F		ME
	S.L. VICKERY	19	F		ME
	FRANCES LANCERY	18	F		ME
	CHARLOTTE FORD	18	F		ME
	M.A. COCHRAN	27	F		NH
	ABBY BUTLER	26	F		ME
	BETSEY C. BATCHELDER	16	F		NH
	M.F. BATCHELDER	23	F		NH
	F.A. JOY	18	F		MA
	L. ELLSWORTH	14	F		NH
	L. ELLSWORTH	16	F		NH
	M.B. BORWN	20	F		ME
	G. JOHNSON	22	F		ME
	E.S. PARKER	16	F		ME
	O.E. WELLES	22	F		ME
	EUNICE ESTES	20	F		ME
	C.E. BAILEY	20	F		NH
	M. SIMPSON	16	F		NH
	ELSIE M. FISH	25	F		VT
	M.M. REESE	17	F		VT
	S.E. HILL	20	F		VT
	EXPERIENCE SRAGENT	22	F		ME
	SARAH ELLIOT	22	F		CAN
	SOPHIA CARELTON	36	F		NH
	R.E. FOUNTAIN	18	F		ME
	ELIZABETH FOSSETT	18	F		ME
	E.A. FOUNTAIN	20	F		ME
	HARRIET FOSSETT	20	F		ME
	M.E. EDMONDS	20	F		NH
	H.G. EDMONDS	22	F		NH
	ESTHER CORLISS	24	F		VT
	EMMELINE CORLISS	18	F		VT
	JANE TRACY	18	F		ENG
	ANN TRACY	20	F		ENG
	ANN CONLEY	18	F		IRE
	ELLEN DONAHUE	24	F		IRE
	HELEN WELCH	32	F		IRE
	MARGARET DOLAN	24	F		IRE
	MARY MOONEY	30	F		IRE
	ANNA FIELD	22	F		MA
	EDNA RICH	35	F		NH

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	S.A. DRAPER	20	F		NH
	ROXA ELLIOT	18	F		CAN
	M.E. MCLAUGHLIN	17	F		CAN
	M.J. MADDEN	17	F		MA
	SOPHIA LESLIE	20	F		MA
	ANN FLANNAGAN	18	F		IRE
37					
39	JAMES STARBIRD	25	M	MANUFACTURER	ME
	C.G. STARBIRD	30	F		ME
	SARAH STARBIRD	5	F		MA
	A.S. STARBIRD	6M	M		MA
	ALONSO WINN	25	M		NH
40A	RUEL L. WESTON	39	M	PAINTER	NH
	ANN WESTON	36	F		NH
	R.H. WINN	5	M		MA
	JOHN LAMSON	22	M	MANUFACTURER	VT
	M. LAMSON	17	F		ME
B	DANIEL R. WALLACE	27	M	MANUFACTURER	NH
	ALMIRA WALLACE	29	F		ME
	THOMAS WALLACE	18	M	CLERK	ME
41	WILLIAM STEBBINS	48	M	MANUFACTURER	MA
	ELVIRA STEBBINS	48	F		MA
	SARAH E. STEBBINS	20	F		MA
	WILLIAM STEBBINS	18	M	APOTHECARY	MA
	CHARLES H. STEBBINS	5	M		MA
	HANNAH STEBBINS	13	F		MA
	EDMUNDS S. STEBBINS	8	M		MA
	SUSAN STEBBINS	4	F		MA
42	ALHENANT W. SARGENT	26	M	SPINNER	NH
	SARAH JANE SARGENT	24	F		MA
	THOMAS W. SARGENT	2	M		MA
	HENRY J. ASHLEY	29	M	MANUFACTURER	ME
	SUSAN C. ASHLEY	27	F		MA
	HANNAH L. ASHLEY	2	F		MA
	HANNAH FLETCHER	22	F		MA
43	ESTHER DREW	58	F	KEEPER	NH
	ISAAC DREW	25	M	MACHINIST	NH
	ESTHER C. DREW	25	F		NH
	SARAH TUCKER	17	F		IRE

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	ADALINE DEARBORN	35	F		NH
	LUCINDA HALL	19	F		NH
	MARY SMITH	21	F		CAN
	MARY MCDOUGALL	20	F		ME
	SUSAN COOK	19	F		VT
	NANCY WALKER	19	F		NH
	ANN HENRY	22	F		IRE
	SUSAN ROBERTS	17	F		ME
	SARAH TREVILLION	20	F		ME
	EUNICE TEVILLION	17	F		ME
	MRS. SYLVESTER	40	F		VT
	HANNAH BENNETT	19	F		NH
	MARY JANE ROLLINS	19	F		MA
	MARIA JONES	16	F		NH
	CHARLOTTEE GIBSON	44	F		VT
	EMMELINE BROOKS	34	F		VT
44	MARTHA LUFKIN	36	F	KEEPER	NH
	ELVIRA PEABODY	22	F		MA
	ADELINE COLTON	21	F		NH
	ELVIRA WHITTAKER	30	F		ME
	JANE STEVENS	30	F		MA
	RUTH BLAISDELL	20	F		MA
	ADELINE FLORIDA	25	F		NH
	JANE WORTH	20	F		ME
	BETSEY WORTHEY	18	F		ME
	REBECCA SWEETSER	21	F		MA
	LORETTA GEORGE	20	F		ME
	OLIVE GAY	18	F		ME
	SARAH HARVEY	21	F		MA
	SOPHIA DANTON	22	F		ME
	ADA CHAPMAN	20	F		ME
	HENRIETTA FARNSWORTH	17	F		VT
	MELINDA RATHBONE	21	F		NY
	ADELAIDE WALKER	20	F		VT
	SARAH PAGE	21	F		ME
	EMMA COE	22	F		ME
	SOPHIA WADE	35	F		MA
	HANNAH WHIDDEN	35	F		VT
	SUSAN BLAKE	20	F		VT
	EMILY PEABODY	16	F		MA
	ANN MINER	20	F		IRE
	HANNAH EASTMAN	20	F		NH

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	MARTHA EASTMAN	22	F		NH
	MELISSA EASTMAN	16	F		NH
	LUCINDA GUILD	19	F		NH
	CANDACE RICHARDSON	18	F		VT
	BETSEY GEER	20	F		NY
45	AMANDA M. FOX	40	F	KEEPER	MA
	DIANNE L. FOX	11	F		NH
	GEORGE J. FOX	9	M		MA
	LUCINDA PECK	31	F		NH
	ELISABETH BENNETT	35	F		MA
	DOLLY HEARD	23	F		NH
	LUCY COBURN	19	F		MA
	ALICE COBURN	24	F		MA
	REBECCA CHAMBERLIN	23	F		VT
	EMELINE CURRIER	15	F		NH
	MARY A. HARREYER	20	F		CAN
	LAVINIA WANER	24	F		VT
	CLEISINDE FOSTER	24	F		VT
	MABELINE FOSTER	24	F		VT
	BELINDA BLIP	30	F		VT
	NANCY GLAISER	30	F		NY
	ELISABETT HAMLIN	23	F		MA
	DORCUS A. WOODSOME	25	F		MA
	MARY A. HALL	28	F		MA
	OCTAVIA JACK	17	F		MA
	ROXANA ARNOT	17	F		CAN
	LYDIA ALLARD	20	F		VT
	SARAH BARTLETT	22	F		ME
46	JOHN B. WARREN	49	M	MANUFACTURER	NH
	REBECCA G. WARREN	49	F		NH
	GEORGE K. WARREN	17	M		NH
	HARRIET P. JAMESON	25	F		NY
	REBECCA E. JAMESON	23	F		NY
	SARAH F. JAMESON	20	F		NY
	INDIANA E. JAMESON	18	F		NY
47	MARK W. DOE	32	M	MECHANIC	ME
	BETSEY DOE	32	F		VT
	ALONSO C. DOE	6	M	DEAF/DUMB	MA
	ELLA JANE DOE	4	F		MA

1850

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
48	PLINY LITCHFIELD	44	M	MECHANIC	MA
	PHILOMENE LITCHFIELD	41	F		MA
	HELEN LITCHFIELD	1	F		MA

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
33							
34							
35	GEORGE FISKE	74	M	BOARDINGHOUSE		$400	NH
	AMANDA FISKE	76	F				MA
	SARAH N. FISKE	27	F	LOOM HARNESS KNITTER			MA
	JONATHON L. FISKE	25	M	SALESMAN			MA
	MARTHA WHITE	20	F	MILL HAND			VT
	ADA WELLS	19	F	MILL HAND			NH
	HANNAH PATTEN	28	F	MILL HAND			ME
	NARRIET ROBBINS	28	F	MILL HAND			ME
	ANN R. RAY	28	F	MILL HAND			ME
	SARAH GAY	19	F	MILL HAND			ME
	CARRIE GILPATRICK	23	F	MILL HAND			ME
	MARY FLANDERS	33	F	MILL HAND			NH
	LUCINDA STERLING	17	F	MILL HAND			MA
	MATILDA STERLING	22	F	MILL HAND			MA
	MARY A. MCGRATH	24	F	MILL HAND			NH
	SARAH MCGRATH	24	F	MILL HAND			NH
	MARY J. FOLGER	19	F	MILL HAND			CAN
	HANNAH JONES	21	F	MILL HAND			ME
	MARIA SMITH	30	F	MILL HAND			ENG
	ANNA BLAISDELL	23	F	SERVANT			ME
36	NANCY CALEF	67	F	BOARDINGHOUSE		$400	NH
	LARSEN CALEF	52	F	BOARDINGHOUSE			NH
	ELLEN BIRGIN	25	F	MILL HAND			IL
	ABBY A. STEVENS	28	F	MILL HAND			ME
	ABBY A. STEVENS	28	F	MILL HAND			ME
	LUCY DANIELS	27	F	MILL HAND			ME
	____ DANIELS	22	F	MILL HAND			ME
	FANNIE FULLER	32	F	MILL HAND			VT
	BETSEY MCINTYRE	33	F	MILL HAND			NH
	NANCY GILSEN	27	F	MILL HAND			MA
	SARAH AMIS	37	F	MILL HAND			MA
	CHARLOTTE DURANT	23	F	MILL HAND			NH
	ELIZA DURANT	21	F	MILL HAND			NH
	MARY HURLBURT	19	F	MILL HAND			NH
	ANN HURLBURT	17	F	MILL HAND			NH
	MARY J. CARLTON	27	F	MILL HAND			MA
	ADELAIDE BATCHELDER	28	F	MILL HAND			ME

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	HANNAH SMITH	45	F	MILL HAND			NH
	LOIS WHITTIER	20	F	MILL HAND			NH
	MARY HAMMELL	22	F	MILL HAND			IRE
	ROSA HAMMELL	18	F	MILL HAND			IRE
	RHODA BUTLER	18	F	MILL HAND			NH
	SARAH BUTLER	22	F	MILL HAND			NH
	ELLEN SPARKS	33	F	SERVANT			IRE
	JENNIE BROWN	18	F	SERVANT			IRE
37	HIRAM HERSEY	56	M	BOARDINGHOUSE		$400	ME
	SUSAN D. HERSEY	50	F				NH
	HERMAN HERSEY	18	M				MA
	FRED HERSEY	11	M	ATTENDS SCHOOL			MA
	CATHERINE LEARY	22	F	SERVANT			IRE
	MARY MOONEY	33	F	MILL HAND			IRE
	JENNIE COX	18	F	MILL HAND			IRE
	HANNAH KNOWLES	18	F	MILL HAND			ME
	SARAH CROCKET	18	F	MILL HAND			ME
	SUSAN CROCKET	17	F	MILL HAND			ME
	MARCELLA LENFEST	20	F	MILL HAND			ME
	VESTA LENFEST	18	F	MILL HAND			ME
	ANNA LISTER	17	F	MILL HAND			ME
	LIZZIE CLIFFORD	25	F	MILL HAND			NH
	ABBY COLE	19	F	MILL HAND			MA
	ROSE BATTERS	20	F	MILL HAND			VT
	GEORGEANNA STUDLEY	18	F	MILL HAND			ME
	ELIZA BLANCHARD	50	F	MILL HAND			MA
	ADA CORLISS	18	F	MILL HAND			MA
	MARY ROBERTSON	28	F	MILL HAND			NH
	_____ MASON	33	F	MILL HAND			MA
	MARY A. COCKMAN	35	F	MILL HAND			NH
	SAMANTHA BALCH	25	F	MILL HAND			VT
	BETTY LANEY	20	F	MILL HAND			ME
	SAMANTHA LANEY	20	F	MILL HAND			ME
	MIRIAM FARROW	17	F	MILL HAND			ME
3 and 40	SUSAN C. QUIMBY	53	F	MILL HAND		$450	NH
	FRANK A. COLBY	23	M	MILL HAND			MA
	ISAAC C. COLBY	60	M	MACHINE SHOP CLERK			NH
	MARY LEARY	24	F	SERVANT			IRE
	ANN LEARY	20	F	SERVANT			IRE
	HORACE D. WOODBURY	34	M	MACHINIST			NH
	SARAH WOODBURY	30	F	MILL HAND			NH
	GEORGE LEONARD	40	M	CARPENTER			MA

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	MRS. LEONARD	37	F				MA
	ALBERT SIMPSON	24	M	PRINTER			ME
	JUDSON T. NISTERN	25	M	PRINTER			VT
	LEONARD JEWELL	34	M	OVERSEER			ME
	MRS. JEWELL	35	F				ME
	CHARLES JEWELL	10	M	ATTENDS SCHOOL			NH
	DANIEL W. MANNING	24	M	MACHINIST			MA
	ALBERT W. WILLEY	25	M	PAINTER			MA
	JOSEPH H. LEWIS	26	M	MACHINIST			MA
	GEORGE POWELL	25	M	MILL HAND			NH
	GEORGE MCFARLANE	18	M	MILL HAND			NH
	GEORGE BOOT	25	M	MILL HAND			VT
	JONATHON HARRAN	24	M	MILL HAND			VT
	ABNER N. MORRILL	29	M	CLERK IN STORE			NH
	GEORGE TARBELLA	21	M	CLERK CLOTHING STORE			MA
	GEORGE MASON	30	M	OVERSEER			MA
	MRS. MASON	28	F				MA
	E.C. POTTER	18	M	CLERK DRY GOODS			NH
	GEORGE ROBINSON	23	M	MILL HAND			ME
	GEORGE ROBERTSON	24	M	MILL HAND			VT
	GEORGE RUSSELL	37	M	SHOE TRADER		$300	MA
	MRS. GEORGE RUSSELL	23	F				NH
	MILES MATHER	24	M	MILL HAND			ME
	JAMES MILCH	24	M	MILL HAND			ENG
	GEORGE N. HILTON	22	M	LABORER			MA
	LEMUEL N. DOLTON	18	M	APPRENTICE			MA
39	DOMINICIUS STACKPOLE	40	M	MILL HAND		$75	ME
	SARAH A. STACKPOLE	36	F				MA
	ELLEN KINNEY	40	F	MILL HAND			ENG
	DANIEL M. KINNEY	14	M				ENG
	ELLEN KINNEY	0	F				MA
	ALBERT C. WOODWARD	25	M	MILL HAND		$100	VT
	MARY WOODWARD	26	F				NY
	WALTER WOODWARD	0	M				MA
	ALDRED WOODWARD	9	M	ATTENDS SCHOOL			VT
41	JAMES STODDARD	37	M	MILL HAND		$100	ME
	_____ STODDARD	39	F				ME
	SARAH STODDARD	15	F	ATTENDS SCHOOL			MA
	ASA L. STODDARD	10	M	ATTENDS SCHOOL			MA
	SARAH HATCH	63	F	DOMESTIC			ME
	CORDELIA HOYT	40	F	MILL HAND		$70	NH
	ELLEN _____	28	F	MILL HAND			MA

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
42	JEREMIAH TASKER	44	M	WATCHMAN	$2000	$300	NH
	LUCY TASKER	44	F				NH
	LUCY J. TASKER	10	F	ATTENDS SCHOOL			NH
	MARY HANSCOM	35	F	SEAMSTRESS			ME
	FRANK HANSCOM	15	M	ATTENDS SCHOOL			ME
	KATIE HANSCOM	12	F				ME
43	RUEL L. WESTON	52	M	BOARDINGHOUSE		$400	NH
	ANNA K. WESTON	40	F				NH
	RUEL H. WESTON	15	M	ATTENDS SCHOOL			MA
	INEZ K. WESTON	4	F				MA
	A.B. BROWN	28	M	CORP. WATCHMAN			NH
	CHARLES WHITNEY	22	M	CLERK IN STORE			NH
	SYLVESTER PRESCOTT	30	M	MACHINIST			MA
	MARIE PRESCOTT	28	F	MILL HAND			MA
	_____ COBURN	31	F	MILL HAND			MA
	MARY PIPER	24	F	MILL HAND			ME
	ANNA CLARK	30	F	MILL HAND			NH
	LUCY GRENOUGH	18	F	MILL HAND			NH
	JENNIE PALMER	16	F	MILL HAND			NH
	MARTHA MASON	30	F	MILL HAND			VT
	LIZZIE RILEY	20	F	MILL HAND			NH
	ABBY RILEY	18	F	MILL HAND			NH
	JULIETTA JOHNSON	20	F	MILL HAND			VT
	MARY WOOD	19	F	MILL HAND			VT
	MARIA WOOD	45	F	MILL HAND			MA
	ANNA ELLIS	18	F	MILL HAND			VT
	MARIA MASON	20	F	MILL HAND			VT
	EMILY BARKER	30	F	MILL HAND			NH
	MARIA ADAMS	20	F	MILL HAND			ME
	ANGELINA GOULD	25	F	MILL HAND			ME
	MARY BURNS	40	F	MILL HAND			IRE
	MARY MCCARTHY	40	F	MILL HAND			IRE
	SUSAN LOUIS	18	F	MILL HAND			ME
	LOUISA CAVERLY	18	F	MILL HAND			MA
	ELIZABETH BALL	28	F	MILL HAND			ME
44	AURELIA A. AUSTIN	56	F	BOARDINGHOUSE		$400	VT
	EZRA AUSTIN	36	M	TEAMSTER			VT
	A.E. HOYT	38	F	DOMESTIC			VT
	HELEN HOYT	13	F	ATTENDS SCHOOL			VT
	ANGELINA HOYT	11	F	ATTENDS SCHOOL			VT
	A.K. BAKER	36	M	CLERK CLOTHING STORE			NH

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	MRS. C. BAKER	24	F	CAP MAKER			NH
	CHARLES DREW	32	M	CARPENTER			NH
	CLARA D. DREW	17	F	MILL HAND			ME
	JOHN DUNBAR	35	M	MILL HAND			IRE
	AMELIA DUNBAR	30	F	MILL HAND			VT
	ELLEN DUNBAR	12	F				VT
	HENRY GREEN	26	M	MACHINIST			MA
	SARAH C. GREEN	30	F	MILL HAND			VT
	CHARLES MANDERS	22	M	BARBER			PORT
	FRANK _____	27	M	BARBER			PORT
	MANUEL AVILLA	23	M	BARBER			PORT
	JOSIAH FLANDERS	23	M	APPRENTICE			NH
	NATHAN _____	22	M	APPRENTICE			NH
	GEORGE SMITH	28	M	MASON			MA
	CHARLES E. DODGE	24	M	BELT MAKER			VT
	ALFRED SMITH	22	M	MASON			NH
	EVERTE CUMMINGS	22	M	MASON			NH
	ANN OSBORN	26	F	MILL HAND			IRE
	_____ BARRETT	28	F	SERVANT			IRE
45	AMANDA M. FOX	50	F	BOARDINGHOUSE		$200	MA
	MARIA L. FOX	21	F				NH
	GOERGE FOX	18	M	APPRENTICE			MA
	LUCINDA HEATH	49	F	DOMESTIC			NH
	ALICE COBURN	32	F	MILL HAND			MA
	MIRIAM COBURN	15	F	MILL HAND			MA
	LUCY COBURN	11	F	ATTENDS SCHOOL			MA
	REBECCA FOX	40	F	MILL HAND			MA
	SARAH FOX	49	F	TAILORESS			MA
	ELIZA N. FOX	22	F	MILL HAND			MA
	JULIA PROCTOR	24	F	MILL HAND			MA
	SARAH WESTON	35	F	MILL HAND			ME
	ELLEN LANE	28	F	MILL HAND			NH
	HARRIET LANE	25	F	MILL HAND			NH
	MARINDA WARREN	19	F	MILL HAND			VT
	SARAH DANA	19	F	TAILORESS			VT
	JANE BUTLER	18	F	TAILORESS			NH
	HANNAH WHITTIER	40	F	MILL HAND			VT
	ADALAIDE FISHER	33	F	MILL HAND			VT
	ELLEN DINSMORE	25	F	MILL HAND			VT
	SARAH NORCROSS	26	F	MILL HAND			ME
	LOUISA H__LAND	22	F	MILL HAND			ME
	MARTHA MINARD	30	F	MILL HAND			NH

1860

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	MARTHA BLODGET	22	F	MILL HAND			MA
	ABBY FRAZIER	28	F	MILL HAND			NOVA
	MARTHA HOBBS	30	F	MILL HAND			NH
	MARY A. GLEASON	26	F	MILL HAND			NOVA
	MARIA HENCHLEY	22	F	MILL HAND			NH
	NELLIE CARTER	20	F	MILL HAND			VT
	KATY YOUNG	20	F	MILL HAND			NH
	MARY MASON	19	F	MILL HAND			NH
	MARTHA GALLARD	24	F	MILL HAND			NOVA
46A	JOHN B. WARREN	55	M	OVERSEER CARDINGROOM		$500	NH
	REBECCA L. WARREN	57	F				NH
	GEORGE C. WARREN	27	M			$2000	NH
	CATHERINE DANFORTH	40	F	PHOTOGRAPH ASSISTANT			NH
B	MARTHA H__MMAFORD	37	F	DOMESTIC			NH
	MARY H__MMAFORD	35	F	INVALID			NH
47	HORACE B. FRENCH	35	M	OVERSEER WEAVE ROOM		$1000	VT
	ELIZA L. FRENCH	30	F				ME
	SIDNEY WOOD	26	M	ROLL COVERER			VT
	HATTIE BURBECK	20	F	MILLINER			VT
48	DANIEL L. MILLIS	39	M	MACHINIST			MA
	MRS. D.C. MILLIS	37	F				NH
	FRED D. MILLIS	11	M	ATTENDS SCHOOL			MA
	EDWARD L. MILLIS	9	M	ATTENDS SCHOOL			MA
	WILLIAM H. MILLIS	5	M	ATTENDS SCHOOL			MA

1870

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
33	ELIZA DODGE	64	F	KEEPING HOUSE			MA
	ELIZA A. DODGE	24	F	WORKS WOOLEN MILL			MA
	MARY J. DODGE	42	F	BOOKKEEPER IN OFFICE			MA
	SARAH M. DODGE	40	F	WORKS IN COTTON MILL			MA
34	LEVI PALMER	36	M	CONDUCTOR RAILROAD			ME
	LIZZIE PALMER	29	F	KEEPING HOUSE			ME
	GEORGE PALMER	10	M	ATTENDING SCHOOL			MA
35							
36	SUSAN CALEF	63	F	KEEPING HOUSE	$1500	$3000	NH
	MARY O'NEAL	20	F	DOMESTIC			IRE
	MARY VAUGHAN	20	F	DOMESTIC			IRE
	JOHN BURKE	25	M	WORKS COTTON MILL			IRE
	MARY BURKE	23	F	WORKS COTTOM MILL			IRE
	MAGGIE GRIMES	28	F	WORKS COTTON MILL			IRE
	ELLEN DONALD	18	F	WORKS COTTON MILL			IRE
	ANNIE S. RYON	23	F	WORKS COTTON MILL			IRE
	CATHERINE MURRAY	32	F	WORKS COTTON MILL			IRE
	ANNA MCALEEN	23	F	WORKS COTTON MILL			IRE
	MAY MCCABE	32	F	WORKS COTTON MILL			IRE
	MARY A. MCCABE	17	F	WORKS COTTON MILL			IRE
	CELICIA GAFFNER	33	F	WORKS COTTON MILL			IRE
	ELIZA EVERETT	23	F	WORKS COTTON MILL			IRE
	MARY MONHAN	34	F	WORKS COTTON MILL			IRE
	CATHARINE ROWE	35	F	WORKS COTTON MILL			CAN
	MARY HANLEY	32	F	WORKS COTTON MILL			ENG
	SARAH E. HANLEY	18	F	WORKS COTTON MILL			ENG
	ANNA PRESCOTT	38	F	WORKS COTTON MILL			NH
	STELLA PRESCOT	17	F	WORKS COTTON MILL			NH
	ADA PRESCOT	14	F	WORKS COTTON MILL			NH
	THOMAS GILDAY	22	M	WORKS COTTON MILL			IRE
	MARY GILDAY	27	F	WORKS COTTON MILL			ENG
37	SAMUEL PATTERSON	48	M	OVERSEER MILL			VT
	MARY A. PATTERSON	37	F	KEEPING HOUSE			ME
	MARY E. PATTERSON	9	F	ATTENDING SCHOOL			MA
	HATTIE M. PATTERSON	7	F	ATTENDING SCHOOL			MA
	NELLIE PATTERSON	4	F	AT HOME			MA
	WANDA BRADISH	26	F	DOMESTIC			NY
	SARAH BURRELL	29	F	WORKS COTTON MILL			ME
	IDA BURRELL	14	F	WORKS COTTON MILL			ME

1870

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	M. AVERILL	20	F	WORKS COTTON MILL			ME
	LARISSA AVERILL	23	F	WORKS COTTON MILL			ME
	EMMA WOOSLER	26	F	WORKS COTTON MILL			ME
	JENNIE WOOSLER	14	F	WORKS COTTON MILL			ME
	SARAH FARROW	40	F	WORKS COTTON MILL			CT
	LOIS RIX	18	F	WORKS COTTON MILL			NH
	AUGUSTA NORTON	25	F	WORKS COTTON MILL			ME
	CARRIE DAVIS	25	F	WORKS COTTON MILL			VT
	LUCINDA HEALD	38	F	WORKS COTTON MILL			VT
	C. ARMONSTRONG	22	F	WORKS COTTON MILL			VT
	LUCY BORIE	20	F	WORKS COTTON MILL			VT
	SARAH NUDD	25	F	WORKS COTTON MILL			ME
	ELSIE BIXBY	30	F	WORKS COTTON MILL			NY
	ELIZA GILSON	30	F	WORKS COTTON MILL			NY
	ALICE SIMMONS	20	F	WORKS COTTON MILL			ME
38	PHILIPS THOMAS	42	M	CARPENTER			VT
	IRINE THOMAS	37	F	KEEPING HOUSE			ME
	ADA J. THOMAS	9	F	ATTENDING SCHOOL			MA
	GRACIA THOMAS	5	F	AT HOME			MA
	NELLIE BEADDE	23	F	DOMESTIC			VT
	MARGARET WELLS	21	F	DOMESTIC			NY
	CHARLES D. PORTER	23	M	CORP. WATCHMAN			VT
	JOSEPH S. BENNETT	24	M	WORKS COTTON MILL			ENG
	JAMES BENNETT	22	M	WORKS COTTON MILL			ENG
	SAMUEL HIGHANN	22	M	WORKS COTTON MILL			ENG
	GEORGE W. LEONARD	20	M	WORKS COTTON MILL			VT
	FRED WHEELER	19	M	WORKS COTTON MILL			ME
	JACOB MASON	18	M	WORKS COTTON MILL			ME
	DAVID SANDS	45	M	WORKS COTTON MILL			CAN
	ANN SANDS	45	F	WORKS COTTON MILL			CAN
	JOHN SANDS	20	M	WORKS COTTON MILL			CAN
	JOSEPH GAFLIN	17	M	WORKS COTTON MILL			MA
	JAMES CONWAY	26	M	WORKS COTTON MILL			ENG
	JAMES MCDONALD	23	M	WORKS COTTON MILL			CAN
	THOMAS KANE	28	M	WORKS COTTON MILL			IRE
	BRIDGET KANE	22	F	WORKS COTTON MILL			IRE
	JOHN LYNCH	24	M	WORKS COTTON MILL			MA
	JOHN GREEN	19	M	WORKS COTTON MILL			IRE
	PATRICK KELLEY	25	M	WORKS COTTON MILL			IRE
	ELLEN SHANIGAN	19	F	WORKS COTTON MILL			IRE
	JAMES WOODS	25	M	WORKS COTTON MILL			ME

1870

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
39	LEONARD MORRIL	53	M	WORKS COTTON MILL		$5000	NH
	RUTH H. MORRIL	42	F	KEEPING HOUSE			MA
	MELISSA MORRIL	23	F	MILLINER			NH
	JULIA C. COBURN	22	F	WORKS COTTON MILL			MA
	WESLEY PLUMNER	28	M	WORKS COTTON MILL			ME
	SARAH PLUMNER	23	F	WORKS COTTON MILL			ME
	ELLEN HALL	31	F	WORKS COTTON MILL			NH
	LIZZIE HALL	28	F	WORKS COTTON MILL			ME
40	HORACE D. WOODBURY	28	M	CARPENTER			NH
	SARAH J. WOODBURY	37	F	KEEPING HOUSE			NH
	HELEN A. BUTMAN	12	F	ATTENDING SCHOOL			VT
	ADA A. COLBY	37	F	CLERK IN STORE			NH
41	ELBRIDGE G. KNOWLES	54	M	WORKS COTTON MILL		$2000	MA
	MARTHA KNOWLES	51	F	KEEPING HOUSE			ME
	MANLENS KNOWLES	30	M	BLACKSMITH		$1500	MA
	MARTHA KNOWLES	28	F	DRESSMAKER		$1000	VT
	LILLIA KNOWLES	5	F	ATTENDING SCHOOL			MA
42	WILLIAM HYDE	55	M	WORKS COTTON MILL			ENG
	ELIZABETH HYDE	54	F	KEEPING HOUSE			ENG
	MARY HYDE	20	F	WORKS COTTON MILL			ENG
	BARKER NUTTALL	20	M	WORKS COTTON MILL			ENG
43	DANIEL G. TAYLOR	33	M	CLERK IN OFFICE			ME
	SYBELLE TAYLOR	32	F	KEEPING HOUSE			MA
	KATE NAVON	19	F	DOMESTIC			IRE
	ELLEN GORMAN	23	F	WORKS MILL			IRE
	HANNAH GORMAN	26	F	WORKS MILL			IRE
	JAMES SARGENT	21	M	WORKS MILL			ME
	SARAH SARGENT	19	F	WORKS MILL			ME
	MARY TRUCKER	36	F	WORKS MILL			NH
	IRINE TAYLOR	21	F	WORKS MILL			ME
	CARRIE SARGENT	23	F	WORKS MILL			NH
	FRANK MCMURRAY	19	M	WORKS MILL			MA
	MARY SCOTT	19	F	WORKS MILL			NH
	LOTTIE MURPHY	21	F	WORKS MILL			NH
	MARY COBURN	24	F	WORKS MILL			MA
	MARY MILLS	34	F	WORKS MILL			MA
	SARAH GORDON	25	F	WORKS MILL			MA
44	MRS. HORANCE L. HOYT	50	F	KEEPING HOUSE		$1000	VT
	LINDA HOYT	21	F	NO OCCUPATION			VT

1870

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	JOHN S. WHITNEY	28	M	MACHINIST			VT
	ELIZA FRENCH	46	F	DOMESTIC			MA
	JOHN W. ANDERSON	25	M	WORKS COTTON MILL			SCOT
	JOHN MOODY	35	M	WORKS COTTON MILL			SCOT
	CHARLES REGAN	45	M	WORKS COTTON MILL			IRE
	ANDREW BOYLE	22	M	WORKS COTTON MILL			MA
	BARTHOLEMEW CONWAY	23	M	WORKS COTTON MILL			IRE
	PATRICK GALLIGHER	28	M	WORKS COTTON MILL			IRE
	_____ SCRUTEN	23	M	WORKS COTTON MILL			ME
	TIMOTHY GOODWIN	21	M	WORKS COTTON MILL			ME
	CHARLES L. DALTON	26	M	WORKS COTTON MILL			ME
	ELMER D. HATHAWAY	23	M	WORKS COTTON MILL			ME
	FRANK BOWMAN	21	M	WORKS COTTON MILL			ME
	RUEL S. FARRIS	21	M	WORKS COTTON MILL			ME
	WILLIAM SOULE	26	M	WORKS COTTON MILL			ME
	LIZZIE M. SOULE	25	F	WORKS COTTON MILL			VT
	CARRIE BROCK	22	F	WORKS COTTON MILL			VT
	GEORGE ADLE	19	M	WORKS COTTON MILL			CAN
	WILLIAM ROBINSON	30	M	WORKS COTTON MILL			ME
	JAMES NUTTALL	30	M	WORKS COTTON MILL			ENG
	GEORGE F. MARCH	28	M	WORKS COTTON MILL			MA
	AMBROSE BROWN	35	M	MACHINIST			NH
	JENNIE BROWN	32	F	WORKS COTTON MILL			IRE
	MARCH E. WHITNEY	18	M	CORP. WATCHMAN			VT
	GEORGE BOWMAN	21	M	WORKS COTTON MILL			ME
45	AMANDA M. FOX	60	F	KEEPING HOUSE			MA
	GEORGIANNA D. FOX	4	F	AT HOME			MA
	LUCIA MOLTON	35	F	WORKS COTTON MILL			NH
	SARAH CASWELL	30	F	WORKS COTTON MILL			ME
	REBECCA FOX	50	F	WORKS COTTON MILL			MA
	MARY J. FOX	20	F	WORKS COTTON MILL			MA
	ELLA FOX	18	F	WORKS COTTON MILL			MA
	AURELIA STEVENS	22	F	WORKS COTTON MILL			VT
	LOUISA BUNSE	18	F	WORKS COTTON MILL			MA
	MARIA CARNEY	17	F	WORKS COTTON MILL			MA
	LUCINDA HEATH	59	F	NO OCCUPATION			NH
46	EDWIN ROBINSON	26	M	WORKS COTTON MILL			ME
	PAMELA ROBINSON	24	F	KEEPING HOUSE			ME
47	JAMES R. FULTON	40	M	WORKS COTTON MILL		$2000	SCOT
	JANE FULTON	38	F	KEEPING HOUSE			SCOT

1870

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	R.E.:	P.E.:	BIRTH:
	MARY FULTON	13	F	WORKS MILL			MA
	LIZZIE FULTON	13	F	WORKS MILL			MA
	ROBERT FULTON	4	M	AT HOME			MA

48

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
33	ELIZA DODGE	74	F	AT HOME	MA
	MARY J. DODGE	52	F	IN COTTON MILL	MA
	SARAH M. DODGE	50	F	IN COTTON MILL	MA
34A	NELSON CHASE	36	M	IN COTTON MILL	ME
	_____ CHASE	31	F	IN COTTON MILL	ME
B	SAM A. WEBSTER	50	M	IN COTTON MILL	MA
	LOTTIE WEBSTER	43	F	IN COTTON MILL	ME
35	RUEL L. WESTON	69	M	HOUSE PAINTER	NH
	ANNIE K. WESTON	59	F	KEEPS BOARDERS	NH
	LYDIA BEERWORK	21	F	HIRED HELP	QUEB
	ALICE FITZGERALD	30	F	HIRED HELP	IRE
	LOUSA RIX	30	F	IN COTTON MILL	NH
	CARRIE RIX	16	F	IN COTTON MILL	NH
	WILLIAM CLASKEY	55	M	IN COTTON MILL	VT
	SUSAN CLASKEY	45	F	IN COTTON MILL	VT
	FLORENCE CLIFFORD	17	F	IN COTTON MILL	QUEB
	LIZZIE CROSS	20	F	IN COTTON MILL	ME
	LUSANN _____	22	F	IN COTTON MILL	MA
	KATIE LEE	40	F	IN COTTON MILL	IRE
	BRIDGET LEE	17	F	IN COTTON MILL	IRE
	BERTHA FOREST	20	F	IN COTTON MILL	ME
	ADDIE DOWNS	20	F	IN COTTON MILL	VT
	MARY BASCOL	32	F	IN COTTON MILL	MA
	BARBARA MCLANE	35	F	IN COTTON MILL	NB
	MARY RYAN	25	F	IN COTTON MILL	ENG
	MARY DONOVAN	20	F	IN COTTON MILL	ME
	KATIE MORAN	18	F	IN COTTON MILL	IRE
	ELEN RYAN	40	F	IN COTTON MILL	IRE
	ELLEN RYAN	11	F	AT SCHOOL	MA
	ELLEN _____	60	F	IN COTTON MILL	IRE
	ANN MCEVOY	60	F	IN COTTON MILL	IRE
	KATIE TRAINER	25	F	IN COTTON MILL	IRE
	ANN HALL	20	F	IN COTTON MILL	IRE
	NELLIE LYNCH	18	F	IN COTTON MILL	MA
36 and 37	SAM M. PATTERSON	58	M	SUPT. CITY SCALES	ME
	MARY A. PATTERSON	49	F	KEEPS BOARDERS	NH
	LIZZIE PATTERSON	18	F	AT HOME	MA
	HATTIE PATTERSON	16	F	AT HOME	MA
	NELLIE PATTERSON	14	F	AT SCHOOL	MA
	SARAH WEBSTER	50	F	SERVANT	NH

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	ANNIE MOLLOY	27	F	SERVANT	IRE
	MARGARET SHANNON	20	F	SERVANT	NY
	KATIE HEWITT	30	F	IN COTTON MILL	NY
	NELLIE HEWITT	18	F	IN COTTON MILL	NY
	OTHELIA REID	18	F	IN COTTON MILL	NY
	EMMA MCKEE	21	F	IN COTTON MILL	NY
	MARION DAY	25	F	IN COTTON MILL	NY
	LYDIA WOOD	22	F	IN COTTON MILL	NY
	LOUISA MURPHY	40	F	IN COTTON MILL	ME
	EMMA MURPHY	18	F	IN COTTON MILL	ME
	HELEN MURPHY	14	F	IN COTTON MILL	ME
	SARAH WASGATT	19	F	IN COTTON MILL	ME
	FRANCES LORD	24	F	IN COTTON MILL	ME
	MARY POTTER	24	F	IN COTTON MILL	ME
	ANNA SHISWELL	26	F	IN COTTON MILL	ME
	DELLA _____	24	F	IN COTTON MILL	ME
	LIZZIE NOEL	24	F	IN COTTON MILL	NB
	LYDIA _____	29	F	IN COTTON MILL	WI
	_____ MCNAYER	29	F	IN COTTON MILL	NOVA
	LAURA CRAWFORD	19	F	IN COTTON MILL	NOVA
	SUSAN ROCK	18	F	IN COTTON MILL	NOVA
	M. HARRINGTON	24	F	IN COTTON MILL	ME
	_____ HARRINGTON	22	F	IN COTTON MILL	ME
	LAURA PRATT	19	F	IN COTTON MILL	NY
	MARY _____	21	F	IN COTTON MILL	MA
	MARY MURRAY	22	F	IN COTTON MILL	IRE
	BRIDGET DONLY	21	F	IN COTTON MILL	IRE
	NELLIE CONLY	23	F	IN COTTON MILL	IRE
	BRIDGET KAHALAM	22	F	IN COTTON MILL	IRE
	LIZZIE KAHALAM	20	F	IN COTTON MILL	IRE
	BRIDGET HOAR	42	F	IN COTTON MILL	IRE
	BRIDGET GILLFILLING	25	F	IN COTTON MILL	IRE
	JANE RILEY	40	F	IN COTTON MILL	IRE
	MARY CALLAHAN	18	F	IN COTTON MILL	NH
	MAGGIE LOUGHLIN	29	F	IN COTTON MILL	IRE
	BRIDGET KERIVAN	23	F	IN COTTON MILL	IRE
	MAGGIE KERIVAN	17	F	IN COTTON MILL	IRE
	EILEEN FARROLL	18	F	IN COTTON MILL	IRE
	_____ CONWAY	18	F	IN COTTON MILL	IRE
	MAGGIE CONWAY	16	F	IN COTTON MILL	IRE
38	_____ KIRBY	56	F	KEEPS BOARDERS	MA
	EDWARD KIRBY	20	M	OFFICE CLERK	MA
	KATIE NEELAN	40	F	IN COTTON MILL	IRE

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	AGNES HARDY	55	F	IN COTTON MILL	SCOT
	HANNAH CARNEY	25	F	IN COTTON MILL	IRE
	JULIA MARTIN	22	F	IN COTTON MILL	IRE
	HANNAH MCCASLIN	33	F	IN COTTON MILL	ME
	CARRIE BROWN	36	F	IN COTTON MILL	VT
	LILLIE BELL	21	F	IN COTTON MILL	VT
	MARY TRACEY	22	F	IN COTTON MILL	NY
	LUCINDA HARRISON	39	F	IN COTTON MILL	VT
	MINNIE HARRISON	15	F	IN COTTON MILL	MA
	MATTIE FORBES	19	F	IN COTTON MILL	MA
	AMANDA DAILEY	40	F	IN COTTON MILL	VT
	KATIE CLUNE	26	F	IN COTTON MILL	IRE
	MAGGIE JACKSON	22	F	IN COTTON MILL	NOVA
	MATTIE JACKSON	17	F	IN COTTON MILL	NOVA
	MARY GLEASON	22	F	IN COTTON MILL	IRE
	MAGGIE GLEASON	17	F	IN COTTON MILL	IRE
	NELLIE HARRINGTON	22	F	IN COTTON MILL	MA
	_____ MONGORAN	28	F	IN COTTON MILL	MA
	MYRA MOORE	50	F	IN COTTON MILL	MA
	KATE MCCARTHY	47	F	IN COTTON MILL	NY
	GEORGIA MARTIN	30	F	IN COTTON MILL	ME
	JEANNIE EDWARDS	17	F	IN COTTON MILL	NOVA
	ANN THOMAS	40	F	IN COTTON MILL	IRE
39	ROLAND H. AYER	43	M	IN COTTON MILL	NB
	OCTAVIA AYER	39	F	KEEPS HOUSE	ME
	ROLAND AYER	12	M	AT SCHOOL	MA
	_____ AYER	11	M	AT SCHOOL	MA
	ALVAH AYER	5	M	AT SCHOOL	MA
	GARY AYER	1	M		MA
40	WINSLOW STONE	43	M	IN MACHINE SHOP	MA
	CHARLOTTE STONE	70	F	KEEPS HOUSE	MA
	CHARLOTTE STONE	41	F	AT HOME	MA
	ELIZA BUCHANAN	45	F	IN COTTON MILL	SCOT
	ANGIE KIMBALL	25	F	IN COTTON MILL	SCOT
	MARY FARRINGTON	18	F	IN COTTON MILL	IRE
	DELIA FARRINGTON	16	F	IN COTTON MILL	IRE
	DELIA PELOU	21	F	IN COTTON MILL	QUEB
	LUCINDA HEALD	65	F	IN COTTON MILL	NH
41a	WILLIAM BRIDATT	32	M	IN COTTON MILL	MA
	ELIZA BRIDATT	30	F	KEEPS HOUSE	QUEB
	WILLIAM BRIDATT	2	M		MA

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
B	HOWARD WING	59	M	DAY LABORER	ME
	CHARLES WING	15	M	IN COTTON MILL	ME
C	JAMES SCHOOLCROFT	31	M	BRICK MASON	QUEB
	MARY SCHOOLCROFT	29	F	IN COTTON MILL	QUEB
42	WILLIAM HYDE	64	M	IN COTTON MILL	ENG
	ELIZABETH HYDE	63	F	KEEPING HOUSE	ENG
	EDWARD HYDE	33	M	DOCTOR	ENG
	MARY E. HYDE	29	F	IN COTTON MILL	ENG
	JAMES NUTTALL	45	M	IN COTTON MILL	ENG
43	HELEN J. BOOKER	48	F	KEEPS BOARDERS	ME
	ANNA REAGAN	31	F	IN COTTON MILL	IRE
	HATTIE THOMPSON	31	F	IN COTTON MILL	NB
	HANNAH O'GORMAN	31	F	IN COTTON MILL	QUEB
	NELLIE O'GORMAN	35	F	IN COTTON MILL	QUEB
	HANNAH PACKARD	49	F	IN COTTON MILL	ENG
	MARY MEAD	43	F	IN COTTON MILL	VT
	ELLA MEAD	17	F	IN COTTON MILL	NH
	MARY COREY	35	F	IN COTTON MILL	IRE
	JANE BECKWITH	32	F	IN COTTON MILL	QUEB
	KATIE MCGRATH	22	F	IN COTTON MILL	MA
	HATTIE MCGRATH	17	F	IN COTTON MILL	MA
	MAGGIE MCGRATH	25	F	IN COTTON MILL	MA
	MIRIAM MASON	18	F	IN COTTON MILL	NH
	SARAH BROWN	26	F	IN COTTON MILL	VT
	AURELIA PERCY	26	F	IN COTTON MILL	NY
	MAGGIE HAWLEY	22	F	IN COTTON MILL	VT
	SARAH FORBES	26	F	IN COTTON MILL	QUEB
44	ABBY E. HOYT	58	F	KEEPS BOARDERS	VT
	HOMER HOYT	34	M	MACHINIST	VT
	LINA HOYT	31	F	AT HOME	VT
	SOPHIA FORD	39	F	HOUSE GIRL	VT
	EMMA PERRY	20	F	HOUSE GIRL	NY
	IDA L. RECKER	20	F	HOUSE GIRL	ME
	JOSEPH ROCKINGHAM	20	M	IN COTTON MILL	QUEB
	JAMES WALLACE	25	M	IN COTTON MILL	QUEB
	GEORGE BLACK	33	M	IN COTTON MILL	ME
	FRANK HILL	24	M	IN COTTON MILL	VT
	THOMAS SULLIVAN	30	M	IN COTTON MILL	IRE
	MICHAEL FAHEY	25	M	IN COTTON MILL	ME

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	FRANK _____	25	M	IN COTTON MILL	NY
	THOMAS MILLS	27	M	IN COTTON MILL	ENG
	JOHN CAVANAUGH	33	M	IN COTTON MILL	IRE
	THOMAS DOUHERTY	40	M	IN COTTON MILL	MA
	PATRICK FLANAGAN	21	M	IN COTTON MILL	MA
	JAMES WOODRUFF	26	M	IN COTTON MILL	MA
45	AMANDA M. FOX	70	F	KEEPS BOARDINGHOUSE	MA
	SARAH COSWELL	39	F	IN COTTON MILL	NH
	SARAH NORCROSS	66	F	IN COTTON MILL	MA
	SARAH FOX	58	F	TAILORESS	MA
	COLBY CRAIG	25	M	WORKS FOR CITY	NB
	COLBY _____	19	M	IN COTTON MILL	MA
	ELLA BICKNELL	32	F	IN COTTON MILL	MA
	ANN E. FOX	41	F	HOUSE GIRL	MA
	ANABEL CRAIG	17	F	IN COTTON MILL	NB
	ALBERTA BILEAU	19	F	IN COTTON MILL	NB
	_____ LESLEY	17	F	IN COTTON MILL	NB
	HENRY MC_____	41	M	CARPENTER	MA
	MARY ROCKINGHAM	24	F	IN COTTON MILL	QUEB
	MARGARET NEAL	17	F	IN COTTON MILL	SCOT
	BARBARA S_____	32	F	IN COTTON MILL	SCOT
	LUCY AVARY	44	F	IN COTTON MILL	NH
	JANE HOLMES	51	F	IN COTTON MILL	ME
46A	JANE QUA	59	F	KEEPING HOUSE	NY
	PAMELLA QUA	38	F	WORKS COTTON MILL	NY
	MARY E. QUA	32	F	AT HOME	NY
	LESTER R. QUA	23	M	IN COTTON MILL	NY
	FRANCIS W. QUA	34	M	LAWYER	NY
	ALICE L. QUA	31	F	AT HOME	NY
	HENRY H. QUA	35	M	IN COTTON MILL	NY
	EMMA L. QUA	19	F	WORKS IN HOUSING	ENG
B	MURDOCK MCRAE	30	M	IN COTTON MILL	ME
	CLARA MCRAE	21	F	IN COTTON MILL	ME
	LEROY MCRAE	5	M		ME
C	EDWARD T. MARSHALL	30	M	IN COTTON MILL	VT
	FRED PEASE	27	M	IN COTTON MILL	ME
47	WILLIAM ELLISON	31	M	IN COTTON MILL	NH
	NELLIE A. ELLISON	28	F	KEEPS HOUSE	NY

1880

FEDERAL CENSUS

NO:	NAME:	AGE:	SEX:	OCCUPATION:	BIRTH:
	BERTHA ELLISON	5	F	AT SCHOOL	NH
	WILLIE ELLISON	3	M		NH
	CHARLES ELLISON	4mo.	M		MA
	GERTRUDE CHASE	12	F	AT SCHOOL	ME
	GEORGE CHASE	7	M		MA
	SARAH CHASE	40	F	IN COTTON MILL	NH
48	JAMES R. FULTON	50	M	IN COTTON MILL	SCOT
	JANE R. FULTON	49	F	KEEPING HOUSE	SCOT
	LIZZIE R. FULTON	22	F	WORKS PAPER BOX WORK	MA
	ROBERT L. FULTON	14	M	AT SCHOOL	MA

1900

FEDERAL CENSUS

STREET NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
JAMES 46	FRED LOW	37	M	NY	BLACKSMITH
	EMILY LOW	32	F	ME	HOUSEKEEPER
	MARY BEEN	19	F	IRE/1885	SERVANT
	HERBERT LAMOREAUX	19	M	CANFR/	SPINNER
	_____ MCKENNAN	24	M	SCOT/1884	SPINNER
	FRANK GANS	17	M	ME	FARM LABORER
	MICHAEL O'ROURKE	20	M	IRE/1896	SPINNER
	LEON PARENT	23	M	ME	FARM LABORER
	WILLIAM _____	12	M	KY	AT SCHOOL
	MARY GARDEN	48	F	ENG/1873	COTTON _____
	WILLIAM _____	43	M	KY	WEAVER
	MARY _____	31	F	SCOT/	COTTON _____
	FRED B_____	26	M	ME	OVERSEER
	THOMAS DUNN	43	M	IRE/1863	COTTON MILL
	FREDERICK BROWN	38	M	ME	WEAVER
	ROBERT TUTLAW	30	M	ENG/1890	WEAVER
	JAMES BROOKS	25	M	ENG/1896	WEAVER
45	ELIZABETH _____	36	F	NY	HOUSEKEEPER
	_____ _____	6	M	NY	AT SCHOOL
	ARTHUR B. LIONS	30	M	ME	WEAVER
	MICHAEL E_____	22	M	IRE/	WEAVER
	JOHN LYDEN	22	M	IRE/	_____
	JOHNSON SMITH	32	M	SC	WEAVER
	GEORGE E. REYNOLDS	39	M	MA	COTTON MILL
	JOHN O'NEIL	28	M	ME	SPINNER
	SIMON GORMAN	29	M	IRE/1885	DYER PLANT WORK
	JAMES CHENEY	68	M	RI	LOOM FIXER
	THOMAS LILLY	34	M	NH	SPINNER
	JOHN _____	37	M	IRE/1872	WEAVER
	MARY A. WAUGH	52	F	ENG/1865	SERVANT
44	MICHAEL _____	__	M	IRE/1857	SPINNER
	BRIDGET _____	35	F	IRE/1878	HOUSEKEEPER
	BERNARD LAF_____	62	M	IRE/1868	SPINNER
	WALLACE PON_____	21	M	MA	ROLL COVERER MILL
	JOHN BORDEN	59	M	ENG/1867	WEAVER
	THOMAS MANNING	41	M	ENG/1880	SPINNER
	WILLIAM GA_____	38	M	ENG/1884	SPINNER
	JOHN RYAN	47	M	ENG/1871	WEAVER
	JOHN MANION	41	M	ENG/1880	SPINNER
	_____ FORD	62	M	IRE/1857	D_____
	JOHN FLATTERY	18	M	IRE/1893	SAILOR

1900

FEDERAL CENSUS

STREET	NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
		FRED BROOKS	28	M	MA	SPINNER
		THOMAS TULLY	21	M	MA	WEAVER
		JOHN SHERIDEN	31	M	IRE/1884	ENGINEER COTTON MILL
		JOHN CARRIGAY	26	M	IRE/1884	SPINNER
		JOHN WILLIAM	42	M	NH	PIANTER IN MILL
		THOMAS RO_____	29	M	ENG/1887	SPINNER
		KATIE RO_____	27	F	IRE/1884	WEAVER
	43	JOSEPH D_____BE	34	M	CANFR/1881	SPINNER
		LENORA D_____BE	34	F	MA	HOUSEKEEPER
		_____ D_____BE	6	M	MA	AT SCHOOL
		_____ D_____BE	4	M	MA	AT SCHOOL
		LEO D_____BE	3	M	MA	
		HELEN D_____BE	2	F	MA	
		MARGARET CHAMPION	60	F	CANFR/1880	WEAVER
		JOHN CHAMPION	62	M	CANFR/1880	SPINNER
		JOSEPH SMITH	19	M	NH	SPINNER
		PIERRE LEF_____	36	M	CANFR/1892	WEAVER
		DANA LEF_____	24	F	CANFR/1892	WEAVER
		FRED_____	41	M	CANFR/1881	SPINNER
		_____ FRED_____	24	F	CANFR/1881	SPINNER
		_____ GRENIER	35	M	CANFR/1890	SPINNER
		_____ GRENIER	34	F	CANFR/1890	WEAVER
		FREDA LAVOIS	37	F	CANFR/1885	WEAVER
		WILLIAM BOUCHARD	25	M	CANFR/1890	WEAVER
		CHARLES DEV_____		M	CANFR/	WEAVER
		LOUISA DEV_____		F	CANFR/1884	WEAVER
JOHN	38	ABSALOM WILMOT	38	M	ENG/1885	BOARDINGHOUSE KEEPER
		ALICE WILMOT	35	F	ENG/1887	HOUSEKEEPER
		FRED WILMOT	13	M	MA	
		FRANK WILMOT	6	M	MA	
		BENJAMIN SCANLON	30	M	MA	SPINNER
		THOMAS KING	21	M	MA	SPINNER
		MARY KING	62	F	IRE/1883	SERVANT
		_____ LANG_____	35	M	CANFR/1884	WEAVER
		JOSEPH ROY	37	M	CANFR/1867	MILL CARPENTER
		_____ DAVIS	26	M	CANFR/1892	SPINNER
		DILLON _____	49	M	CANFR/1888	SPINNER
		FRED GREY	37	M	NY	SPINNER
		FIONA GARDINER	39	F	CANFR/1888	MILLINER
		ARTHUR GARDINER	17	M	MA	TANNER
		CHARLES GARDINER	15	M	MA	SPINNER

1900

FEDERAL CENSUS

STREET NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
	HERBERT GARDINER	9	M	MA	AT SCHOOL
	LIDA MARCH	15	F	MA	MILLINER
	JULIA CASEY	21	F	IRE/1880	WEAVER
	JOHN LANG	24	M	PA	SPINNER
	HENRIETTA LANG	21	F	____/1890	WEAVER
	GRADY LANG	5mo.	M	MA	
	GEORGE GAUTHIER	48	M	CANFR/1868	WEAVER
	LOUISA GAUTHIER	15	F	CANFR/1890	SPINNER
	_____ KANE	18	F	ENG/1890	_____
	JULINA CASEY	26	M	MA	WEAVER
	GEORGE _____	24	M	CANFR/1895	_____
	MAY GORIE	33	F	CANFR/1885	WEAVER
	LYDIA MARSH	60	F	VT	WEAVER
	KATE HOSCKIN	19	F	ENG/	COTTON CORDER
37	JOHN MORRIS	57	M	IRE/1860	SPINNER
	BRIDGET MORRIS	39	F	IRE/1883	HOUSEKEEPER
	PATRICK MORRIS	14	M	MA	WEAVER
	JOSEPH MORRIS	9	M	MA	AT SCHOOL
	AMY MORRIS	5	F	MA	AT SCHOOL
	JOHN MORRIS	3	M	MA	
	BRIDGET MORRIS	1	F	MA	
	WILLIAM MILES	36	M	NY	WEAVER
	JOHN WILLIAM	25	M	IRE/1889	WEAVER
	BRIDGET CAN_____	45	F	IRE/1895	WEAVER
	KATIE MCGRATH	21	F	IRE/1891	WEAVER
	PATRICK _____	26	M	ENG/1886	SPINNER
	ANNIE GRAY	33	F	ENG/1880	WEAVER
	WILLIAM _____	29	M	ENG/1888	_____
	ANNIE _____	28	F	IRE/1885	_____
	MARY GRAY	1	F	MA	
	AGNES GRAY	6mo.	F	MA	
	AGNES BAILY	27	F	SCOT/1898	WEAVER
	MARY BAILY	25	F	SCOT/1890	WEAVER
	DELA GLEASON	39	M	IRE/1879	WEAVER
	JOHN GLEASON	11	M	MA	AT SCHOOL
	JOHN GLEASON	63	M	IRE/1891	MACHINIST
	MARY RIDDLER	47	F	NH	HOUSEKEEPER
	WILLIAM RIDDLEE	48	M	ENG/1864	SPINNER
	MARY QUINN	21	F	IRE/1898	SERVANT
	PATRICK _____	25	M	ENG/1895	SPINNER
	JAMES ____	45	M	IRE/1880	SPINNER
	SARAH _____	38	F	SCOT/1879	WEAVER

1900

FEDERAL CENSUS

STREET NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
	WILLY _____	35	M	IRE/1867	WEAVER
	ALTON GIBBS	42	M	SCOT/1878	SPINNER
	DELIA MURPHY	27	F	IRE/1895	WEAVER
	JOHN MCCALLY	27	M	IRE/1889	MACHINIST
	MARY TIERNEY	31	F	IRE/1883	WEAVER
	ANNIE _____	27	F	IRE/1877	WEAVER
	ANNIE FLANNERY	43	F	ENG/1883	SPINNER
	JOSEPH FLANNERY	40	M	IRE/1877	WEAVER
35	THOMAS STINTON	45	M	ME	SPINNER
	MARY STINTON	45	F	IRE/1875	BOARDINGHOUSE KEEPER
	FRANK STINTON	26	M	MA	SPINNER
	FRED STINTON	17	M	MA	AT SCHOOL
	MARY HUNT	47	F	IRE/1874	WEAVER
	MARY _____	32	F	IRE/1895	SERVANT
	WILLIAM BUTTER	24	M	_____	WEAVER
	_____ _____	26	F	IRE/1898	SERVANT
	GEORGE MCVICKER	19	M	NY	WEAVER
	LEWIS VANEY	25	M	MA	SPINNER
	JOSEPH _____	14	M	MA	WEAVER
	SIMONE GROLLER	26	F	CANFR/1883	WEAVER
	FREDDIE GROLLER	26	M	CANFR/1888	WEAVER
	MARIA LEONARD	21	F	IRE/1894	WEAVER
	CATHERINE LEONARD	20	F	IRE/1890	WEAVER
	CHARLES ABBOTT	29	M	VT	MACHINIST
	WILLIAM GRIFFIN	24	M	NH	SPINNER
	ANTHONY DURGIN	34	M	CANFR/1863	_____
	MARGARET REGAN	44	M	IRE/1879	WEAVER
	MARY CAREY	39	F	IRE/1859	WEAVER
	JOSEPH RUSSELL	25	M	NY	WEAVER
	ANNIE MCDONNELL	34	F	CANENG/1886	WEAVER
	ROBERT MECKER	27	M	NY	SPINNER
	_____ RILEY	26	M	NH	SPINNER
	BERTHA RILEY	8	F	NH	AT HOME
FRENCH 70	THOMAS KELLEHER	39	M	ENG/1880	SPINNER
	NELLIE KELLEHER	29	F	ENG/1891	HOUSEKEEPER
	JAMES HALL	42	M	NY	WEAVER
	THOMAS _____	31	M	ENG/1875	_____
	FRANK LAREY	32	M	NOVA/1880	WEAVER
68	MARY DODGE	72	F	MA	HOUSEKEEPER
	SARAH DODGE	69	F	MA	HOUSEKEEPER

1900

FEDERAL CENSUS

STREET NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
52	JAMES NORTH	43	M	ENG/1892	WEAVER
	_____ NORTH	38	F	ENG/1895	HOUSEKEEPER
	BEATRICE NORTH	17	F	ENG/1892	WEAVER
	FREDERICK NORTH	16	M	ENG/1892	AT SCHOOL
	WILLIAM NORTH	13	M	ENG/1895	AT SCHOOL
	GILMORE NORTH	11	M	ENG/1892	AT SCHOOL
	JAMES NORTH	9	M	ENG/1892	AT SCHOOL
	THOMAS NORTH	6	M	MA	AT SCHOOL
50	ROBERT KIRKPATRICK	29	M	CN	BLACKSMITH
	MAGGIE KIRKPATRICK	23	F	NOVA/1890	HOUSEKEEPER/BOARDING
	(Probably Keepers of 46 James)				
AMORY	NO LISTINGS				

1910

FEDERAL CENSUS

STREET:	NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
SIRK	46	ROBERT SUTCLIFFE	65	M	ENG/1889	NONE
		KATHERINE SUTCLIFFE	65	F	IRE/1889	NONE
		JOSEPH McKEEN	14	M	MA	NONE
		JOHN HUGHES	10	M	MA	NONE
		DANIEL HUGHES	10	M	MA	NONE
		JOHN _____	40	M	MA	REPAIR MAN MACHINE SHOP
		ANNA _____	30	F	ME	WEAVER
		KATHY _____	9	F	MA	NONE
		ALICE _____	6	F	MA	NONE
		MAY _____	3	F	MA	NONE
		JULIA RALPHIA	28	F	ENG/1900	WEAVER
		GEORGE RALPHIA	35	M	ENG/1900	SPINNER
		JAMES RODNEY	29	M	IRE/1899	CARD_____
		WILLIAM A. PUNCH	45	M	ENG/____	CARPENTER IN _____
		THOMAS CARROLL	50	M	MA	CARD GRINDER COTTON MILL
	44 & 45	JOSEPH CROTEAN	51	M	CANFR/1902	PROP. BOARDINGHOUSE
		_____ CROTEAN	40	F	CANFR/1902	NONE
		JULIA ST _____	30	F	CANFR/1909	TABLEGIRL
		JOHN BALLEAN	40	M	CANFR/1898	WEAVER
		JOSEPH BALLEAN	34	M	CANFR/1885	WEAVER
		EDWARD _____	42	M	CANFR/1885	WEAVER
		FRANK BALLEAN	36	M	NH	LABORER IN YARD
		ZELDA LEONARD	30	F	MA	SPINNER
		FREDERICK MORAN	32	M	CANFR/1898	LABORER RAILROAD
		WILFRED _____	26	M	CANFR/1898	LABORER RAILROAD
		_____ LA PARTE	18	M	NH	WASHING MACHINE LAUNDRY
		ARTHUR _____	30	M	CANFR/1900	HOUSE PAINTER
		GEORGE _____	30	M	CANFR/1902	LABORER RAILROAD
		HENRY _____	25	M	CANFR/____	WEAVER
		HENRY _____	52	M	CANFR/1890	SHOEMAKER FACTORY
		JOHN BELLEAN	51	M	CANFR/1895	CARD_____
		MARK MC BILLBY	41	M	MA	LOOM FIXER
		JOSEPH _____	66	M	CANFR/1880	CARD_____
JOHN	98	CHARLEY JOHNSON	45	M	ARM/1888	_____
		ALPHONSE BIBEAULT	42	M	CANFR/1891	LABORER COAL YARD
		WILLIAM LUD	55	M	ME	LABORER SEWER WORK
		_____ RAWSDELLE	35	F	ME	NONE
		_____ RAWSDELLE	4	_	MA	NONE
		RICHARD RAWSDELLE	1	M	MA	NONE
		LOUISE MARTIN	62	F	CANFR/1870	SPOOL TENDER
		KATY O'MALLY	44	F	IRE/1875	WEAVER
		JAMES RILEY	25	M	MA	_____HAND MACHINE SHOP
		FRANK ATWOOD	47	M	US	LABORER CONTRACTOR
		FANNY ATWOOD	46	F	IRE/1870	KITCHEN WORK BOARDINGHOU

1910

FEDERAL CENSUS

TREET:	NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
		HENRY CASSIDY	48	M	IRE/1880	MATTRESS MAKER FACTORY
		THOMPSON SIMPSON	65	M	MA	CARD STRIPPER
		FREDDIE CHASUNEAU	45	M	CANFR/1895	LOOM FIXER
		MARY F. ARMOUR	42	F	ENG/1885	FIXING CLOTH CLOTH ROOM
		IRENE ARMOUR	7	F	MA	NONE
		_____ ARMOUR	4	F	MA	NONE
		LOUISE _____	40	F	CANFR/1875	WEAVER
		_____ _____	30	M	ARM/1905	LABORER DRY HOUSE
		_____ _____	32	F	CANFR/1885	SPINNER
	94	_____ _____	52	M	CANFR/1891	BOARDINGHOUSE
		SAVOIE _____	49	F	CANFR/1891	NONE
		MARGARET _____	20	F	MA	TABLE GIRL
		JOHN CA_____	51	M	CANFR/1890	LABORER YARD
		THOMAS _____	45	M	FR/1889	FANCY CLOTH WEAVER
		ESTHER ROBERTS	24	F	NH	SPINNER
		LAURA _____	4	F	MA	NONE
		BLANCHE _____	9	F	MA	NONE
		_____ ROUX	32	F	CANFR/1891	WEAVER
		_____ _____	35	M	CANFR/1902	WEAVER
		EDWARD KILLOUN	54	M	_____ _____	CITY LABORER
		EMILE RHOULT	21	M	CANFR/1899	_____ TENDER
		ANTONIA RHOULT	21	F	CANFR/1908	WEAVER
		LORA CHIFFILIER	20	F	CANFR/1908	SPINNER
		ANTHONY _____	28	M	IT/1892	FIXER RING SPINNER
		_____ _____	28	M	CANFR/1897	SECTION HAND
		JOSEPH CHARETTE	45	M	CANFR/1879	WEAVER
		_____ CHARETTE	42	F	CANFR/1877	_____
		_____ _____	43	F	CANFR/1877	ROOM GIRL _____
		_____ _____	47	M	CANFR/1890	WEAVER
		SILVIUS _____	29	M	CANFR/1899	WORKMAN MACHINE SHOP
		MOSES _____	38	M	CANFR/1884	WEAVER
		OLIVIA _____	38	F	CANFR/1884	RING_____
		JOSEPH _____	16	M	MA	NONE
		LAURIE ROUDIAN	62	F	CANFR/1895	WEAVER
		SAMUEL GILOLEN	46	M	CANFR/1895	WEAVER
		HENRY ALG_____	34	M	MA	THIRD HAND
		JOSEPH _____	36	M	MA	DOFFER SPINNING ROOM
		HENRY CORCORAN	23	M	MA	CLERK DRY GOODS
		WILLIAM _____	23	M	MA	WEAVER
		_____ _____	34	M	MA	WEAVER
		_____ _____	32	M	CANFR/1891	LOOM FIXER
		JOSEPH _____	33	M	NH	LABORER YARD

1910

FEDERAL CENSUS

STREET:	NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
	92	GEORGE DOUGHERTY	47	M	MA	POLISHER
		MAY DOUGHERTY	38	F	ENG/1885	NONE
		JOHN ROGERS	65	M	IRE/1870	SHOE MASON
		JOSEPH _____	40	M	IRE/1876	LABORER DYE HOUSE
		MAY FARRELL	55	F	ENG/1880	SPEEDY TENDER
		MOREY FARRELL	16	M	MA	CARDER CARD ROOM
		THOMAS FARRELL	14	M	MA	NONE
		MAY WELSH	45	F	ENG/1880	_____
		CHARLES RANEY	35	M	CANFR/1885	WEAVER
		JAMES MC CARTHY	42	M	MA	WEAVER
		MARGARET MC CARTHY	27	F	ME	WEAVER
		JOHN MC CARTHY	6	M	ME	NONE
		THOMAS MC CARTHY	4	M	ME	NONE
		RICHARD DOCKERTY	47	M	SCOT/1870	WEAVER
		ALFRED _____	40	M	ENG/1908	HELPS MACHINE SHOP
		LAURENCE _____	35	M	MA	WEAVER
		AUSTIN DUGGAN	44	M	ENG/1893	WEAVER
		ANNE DUGGAN	44	F	ENG/1893	WEAVER
		AUSTIN DUGGAN	8	M	MA	NONE
		_____ CANON	40	F	CANFR/1889	LABORER BUILDING
		LAURENCE MC GULTY	38	M	IRE/1890	MEAT CUTTER
		BERNARD HIGGINS	36	M	IRE/1885	CARD GUIDER (?)
		FRANK GWYN	55	M	MA	_____FIXER CARD ROOM
		EDWARD MC MAHON	50	M	IRE/1875	LABORER RAILROAD
		JOHN SHAW	40	M	IRE/1880	LABORER CARD ROOM
		UNKNOWN	19	M	MA	DYEHOUSE
		CHARLES DAVIS	38	M	MA	WEAVER
		RICHARD MULLAVEY	45	M	IRE/1880	LABORER RAILROAD
FRENCH	70	JOHIN KRYASKS	35	M	POL/1906	LABORER BOILER ROOM
		ADDIE KRYASKS	28	F	POL/1904	BOARDINGHOUSE KEEPER
		STANLEY KRYASKS	4	M	MA	NONE
		MARY KRYASKS	2	F	MA	NONE
		_____ SLOVITS	35	M	POL/1908	LABORER BOILER ROOM
		JOHN LACH	25	M	POL/1909	LABORER BOILER ROOM
		MICHAEL _____	29	M	POL/1909	SLUBBER CARD ROOM
		STANLEY _____	19	M	POL/1903	LABORER YARD
		TEKLA ROS	22	F	POL/1905	FLY FRAME CARD ROOM
		MARY _____	18	F	POL/1909	WEAVER
		KAROLINE ALRZYBALA	20	F	POL/1909	WEAVER
		KATY ROS	18	F	POL/1907	WEAVER
		MARIE KRYZASKA	18	F	POL/1909	FLY FRAME CARD ROOM
		BLANCHE WAVROCKA	20	F	POL/1909	_____ FRAMER
		MARY KOCUS	35	F	POL/1907	WEAVER

1910

FEDERAL CENSUS

STREET:	NO:	NAME:	AGE:	SEX:	BIRTH/IMM:	OCCUPATION:
	68	ALBERT CARDYS	30	M	POL/1901	WEAVER
		MARY CARDYS	28	F	POL/1901	PROP. BOARDINGHOUSE
		MICHAEL CARDYS	7	M	MA	NONE
		BLANCHE CARDYS	4	F	MA	NONE
		_____ KUBLA	22	F	POL?1904	FLYING FRAMES
		KATY WALIK	35	F	POL/1895	FLYING FRAMES
		JOSEPHINE WAZDA	26	F	POL/1903	FLYING FRAMES
		MARIA WAZDA	18	F	POL/1908	WEAVER
		_____ SOBOZYCK	15	F	POL/	WEAVER
		_____ JAROCZ	22	F	POL/1908	FLYING FRAMES
		ALBERT _____	42	M	POL/1904	PICKER ROOM FIXER
		_____ WAZUR	40	M	POL/1899	CARD STRIPPER
		JOHN _____	37	M	POL/1904	WARPER MASKER (?)
		STANLEY _____	24	M	POL/1906	CARD STRIPER
		MICHAEL JUSSEY	40	M	POL/1896	CARDER
		GEMIMA JUSSEY	28	F	POL/1896	NONE
		GEMIMA JUSSEY	8	F	POL/1896	NONE
		WALLY JUSSEY	5	M	MA	NONE
		STEVE JUSSEY	2	M	MA	NONE
		JOHN LOLA	38	M	POL/	WEAVER
		_____ WEINER	17	F	POL/	WEAVER
		LILLIAN _____	35	F	NH	SHOE SHOP BOOKKEEPER
	50	GEORGE JURAS	27	M	POL/1901	CARD_____
		FRANCIS JURAS	25	F	POL/1901	NONE
		VICTORIA JURAS	1	M	MA	NONE
		STANLEY _____SILC	25	M	POL/1908	CARD SLUBBER
		NELLIE _____SILC	25	F	POL/1908	NONE
		BOLEK _____SILC	1	M	MA	NONE
		FRANK P_____	27	M	POL/1904	CARD SLUBBER
		_____ _____	26	M	POL/1906	CARD SLUBBER
AMORY	41	PHILIP PILAF	23	M	POL/1903	WEAVER
		PETROVSKA PILAF	23	F	POL/1903	NONE
		JOHN PILAF	29	M	POL/1902	CARD STRIPER
		JOSEPH PILAF	27	M	POL/1903	CARD STRIPER
		_____ WOLDA	19	F	POL/1902	CARDING ROOM
		JOHN _____	22	M	POL/1907	LABORER CARDING ROOM

CROSS REFERENCE

STREET:	NO:	NAME:	YEAR:	STREET:	NO:	NAME:
AMORY	39	MICHAEL PRZBYLA	1919	AMORY	40	JAN JEZAK
	40	JAN JEZAK				
				FRENCH	52	STORAGE
FRENCH	50	MRS. EMMA MARSHALL			68	JOHN GRIMES
	52	ANTON MARKIEWCZ			70	MICHAEL COURTNEY
	68	MRS. CATHERINE BROWN				
	70	ALPHONSE BIBEAULT		JOHN	92	JAMES T. CROWLEY LODGINGHOUSE
JOHN	92	MRS. CELIA SICARD BOARDINGHOUSE			94	MRS. WILFRED GARANT BOARDINGHOUSE
	94	HORMISDAS ARVISAS BOARDINGHOUSE			98	VAHAN TATIAN
	98	ARMEN PAHIGIAN LODGINGHOUSE		SIRK	46	STORAGE
		ANNIE BATHO MIHRAN PAHIGIAN	1920	AMORY		NO LISTING
SIRK	46#1	MRS. CATHERINE SUTCLIFFE LODGINGHOUSE		FRENCH	50	STORAGE
	#2	THOMAS MORRIS			52	STORAGE
					68	JOHN GRIMES
AMORY	39	MICHAL PRZYBLA			70	JAMES SEAMANS
	40	JAN JEZAK		JOHN	92	MRS. LOUISE BEAULIEU BOARDINGHOUSE
FRENCH	50	STORAGE			94	MRS. HATTIE BROUILLET BOARDINGHOUSE
	52	STORAGE			98	CHARLES DEMERS BOARDINGHOUSE
	68	VACANT				
	70	VACANT				
JOHN	92	ROBERT MEEKER BOARDINGHOUSE		SIRK	46	STORAGE
	94	HORMISDAS ARVISAS BOARDINGHOUSE				
	98	ARMEN PAHIGIAN LODGINGHOUSE				
		ANNIE BATHO				
SIRK	46	STORAGE				

CROSS REFERENCE

STREET:	NO:	NAME:
AMORY	39	JOHN PILAT
	40	GEORGE LAMBERT
FRENCH	50	NO LONGER LISTED
	52	STORAGE
	68	JOHN GRIMES
	70	CATHERINE CONWAY
JOHN	92	MRS. LOUISE BEAULIEU BOARDINGHOUSE PAUL BEAULIEU
	94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
	98#1	IRA. B. DILL
	#2	HARRY BROOKER
SIRK		NO LONGER LISTED
AMORY	39	JOHN PILAT
	40	GEORGE LAMBERT
FRENCH	52	STORAGE
	68	JOHN GRIMES
	70	JOHN O'DONNELL
JOHN	92	VACANT
	94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
	98#1	IRA B. DILL
	#2	HARRY BROOKER
AMORY	39	JOHN PILAT
	40	GEORGD LAMBERT
FRENCH	52	STORAGE
	68	JOHN GRIMES
	70	JOHN O'DONNELL
JOHN	92	VACANT
	94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
	98	VACANT

YEAR:	STREET:	NO:	NAME:
1924	AMORY	39	JOHN PILAT
		40	GEORGE LAMBERT
	FRENCH	52	STORAGE
		68	JOSEPH LAWLER
		70	JOHN O'DONNELL
	JOHN	92	VACANT
		94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
		98	LAWRENCE MELLEN
1925	AMORY	39	JOHN PILAT
		40	GEORGE LAMBERT
	FRENCH	52	STORAGE
		68	JOSEPH LAWLER
		70	JOHN O'DONNELL
	JOHN	92	VACANT
		94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
		98	VACANT
1926	AMORY	39	JOHN PILAT
		40	GEORGE LAMBERT
	FRENCH	50	STORAGE
		52	STORAGE
		68	JOSEPH LAWLER
		70	JOHN O'DONNELL
	JOHN	92	VACANT
		94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
		98	VACANT
1927	AMORY	39	VACANT
		40	GEORGE LAMBERT
	FRENCH	50	STORAGE
		52	STORAGE
		68	VACANT
		70	JOHN O'DONNELL
	JOHN	92	PIERRE VEILLEUX BOARDINGHOUSE
		94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE
		98	VACANT

CROSS REFERENCE

STREET:	NO:	NAME:	YEAR:	STREET:	NO:	NAME:
AMORY	39	VACANT	1931	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	50	STORAGE
	52	STORAGE			52	STORAGE
	68	VACANT			68	VACANT
	70	JOHN O'DONNELL			70	JOHN O'DONNELL
JOHN	92	JOSEPHE COLLIER LODGINGHOUSE		JOHN	92	VACANT
	94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE			94	VACANT
	98	VACANT			98	VACANT
AMORY	39	VACANT	1932	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	50	STORAGE
	52	STORAGE			52	STORAGE
	68	VACANT			68	VACANT
	70	JOHN O'DONNELL			70	JOHN O'DONNELL
JOHN	92	MRS. EMMA R. M. BILODEAU BOARDINGHOUSE		JOHN	92	MRS. DELIA M. BROWN BOARDINGHOUSE
	94	MRS. HATTIE BROUILLETTE BOARDINGHOUSE			94	VACANT
	98	VACANT			96	VACANT
					98	FRED PERRY
AMORY	39	VACANT	1933	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	50	STORAGE
	52	STORAGE			52	STORAGE
	68	VACANT			68	VACANT
	70	JOHN O'DONNELL			70	JOHN O'DONNELL
JOHN	92	VACANT		JOHN	92	MRS. DELIA M. BROWN BOARDINGHOUSE
	94	VACANT			94	VACANT
	98	VACANT			96	VACANT
					98	VACANT

CROSS REFERENCE

STREET:	NO:	NAME:	YEAR:	STREET:	NO:	NAME:
AMORY	39	VACANT	1937	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	50	STORAGE
	52	STORAGE			52	STORAGE
	68	VACANT			68	VACANT
	70	JOHN O'DONNELL			70	JOHN O'DONNELL
JOHN	92	MRS. DELIA BROWN BOARDINGHOUSE		JOHN	92	MRS. DELIA BROWN BOARDINGHOUSE
	94	VACANT			94	VACANT
	96	VACANT			96	VACANT
	98	VACANT			98	VACANT
AMORY	39	VACANT	1938	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	50	NO LONGER LISTED
	52	STORAGE			52	NO LONGER LISTED
	68	VACANT			68	VACANT
	70	JOHN O'DONNELL			70	JOHN O'DONNELL
JOHN	92	MRS. DELIA BROWN BOARDINGHOUSE		JOHN	92	MRS. DELIA BROWN BOARDINGHOUSE
	94	VACANT			94	VACANT
	96	VACANT			96	VACANT
	98	VACANT			98	VACANT
AMORY	39	VACANT	1939	AMORY	39	VACANT
	40	VACANT			40	VACANT
FRENCH	50	STORAGE		FRENCH	68	VACANT
	52	STORAGE			70	JOHN O'DONNELL
	68	VACANT				
	70	JOHN O'DONNELL		JOHN	92	VACANT
					94	VACANT
JOHN	92	MRS. DELIA BROWN BOARDINGHOUSE			96	VACANT
					98	VACANT
	94	VACANT				
	96	VACANT	1940	AMORY	39	VACANT
	98	VACANT			40	VACANT
				FRENCH	68	NO LONGER LISTED
					70	NO LONGER LISTED
				JOHN	92	VACANT
					94	VACANT
					96	VACANT
					98	VACANT

CROSS REFERENCE

: STREET:	NO:	NAME:
AMORY	39	VACANT
	40	VACANT
JOHN	92	VACANT
	94	VACANT
	96	VACANT
	98	VACANT
AMORY	39	VACANT
	40	VACANT
JOHN	92	VACANT
	94	VACANT
	96	VACANT
	98	VACANT
AMORY	39	NO LONGER LISTED
	40	NO LONGER LISTED
JOHN	92	VACANT
	94	VACANT
	96	VACANT
	98	VACANT
JOHN	92	NO LONGER LISTED
	94	NO LONGER LISTED
	96	NO LONGER LISTED
	98	NO LONGER LISTED

APPENDIX C

ARTIFACTS RECOVERED FROM LOWELL BOARDING HOUSE PARK SITE

TRENCH 1 EAST

Object	Level 3	4	5	7	8	10	Feature 1	Feature 8
Stone								
Red shale roofing tile frag.		3				2		
Slate			1	2				
Graphite frag.	1							
Coal	13							27
Mica		2						
Sandstone		2						
Plaster							6	
Mortar	1	3	1			3		
Cement								
Window caulking/glazing			1		1			
Glass								
Window, <.09 cm thick	113							
Window, .10 cm thick			1					1
Window, .15 cm thick		32						7
Window, .20-.25 cm thick	24	77	12	5			6	12
Bottle, clear [square inkwell?]								1
Bottle, clear body frag.	55	53	1				1	
Bottle, clear base frag.		4						
Bottle, clear, embossed body frag. 7	1						1	
Bottle, clear lip/neck frag.	2	3						1
Bottle, manganese body frag.	3	3	1				1	
Bottle, aqua body frag.		3						2
Bottle, aqua base frag.		1						
Bottle, aqua neck frag.		8						
Bottle, aqua, embossed body frag.		1						
Bottle, brown body frag.	4	6						1
Bottle, blue body frag.		1						1
Bottle, blue rim frag.	1							
Bottle, green body frag.	3	1						
Tumbler, clear rim frag.		3						
Tumbler, manganese rim frag.		2						
Other Container, clear body frag.		13						5
Yellow-brown, molded (lamp base?)		1						
Milkglass, rim frag.		1						
Pressed, clear body frag.		1						
Lamp chimney, clear								3
Mirror		1						

APPENDIX C, cont'd.

TRENCH 1 EAST, cont'd.

Object	Level 3	4	5	7	8	10	Feature 1	Feature 8
Ceramic								
Brick frag.	1	3						2
Redware, unglazed body frag.		1		1				
Redware, unglazed rim frag.	1	2						1
Redware, green glaze ext., body frag.		1						
Redware, brown glaze, base frag.		1						
Earthenware, buff-body, body frag.	1							
Earthenware, Bennington-type body frag.		1						
Creamware, body/base frag.	2		5					
Pearlware, body frag.	2	17		1				
Pearlware, blue edge, rim frag.	1	7						
Pearlware, green edge body frag.	1							
Pearlware, annular rim frag.	1	1						
Pearlware, hand painted, body frag.		1						
Whiteware, Ironstone, body frag.		8						2
Whiteware, Ironstone, base frag.		1						
Whiteware, Ironstone, rim frag.		3						
Whiteware, plain, body frag.	11	23						3
Whiteware, plain, rim frag.	3	7				1		3
Whiteware, plain, handle frag.								1
Whiteware, annular body frag.	1		1					
Whiteware, hand painted, body frag.							1	
Whiteware, blue TP body frag.	1	2					1	
Whiteware, black TP body frag.		1						
Whiteware, brown TP rim frag.		1						
Whiteware, blue sponge dec., body frag.								1
Whiteware, blue sponge dec., rim frag.							1	
Whiteware [?], blue edge, rim frag.						1		
Yellow ware, rim frag.		1						
Stoneware, grey body frag.		1						
Porcelain, undec. body frag.		4						
Porcelain, undec. rim frag.	1							
Porcelain, undec. base frag.		1						
Porcelain bisque figurine frag.		2						
Porcelain, doll's tea set saucer		1						
Tobacco Pipe, white clay								
Bowl frag.	4							1
Stem frag., 5/64"	1							1
Bowl/stem frag., 6/64"		2						
Indeterminate	1							
Tobacco Pipe, red clay								
Stem frag., 5/64"	1							

APPENDIX C, cont'd.

TRENCH 1 EAST, cont'd.

Object	Level 3	4	5	7	8	10	Feature 1	Feature 8
Metal, iron								
Nails, cut	1		2	1	4			1
Nails, wire	2							
Nails, unidentified	46	10						
Wire	4							
Staple	1							
Staple or clothing fastener?								1
Washer?								1
Sheet metal, tin can (?)	14		3	1				26
Tin can frag.		2						9
Crown bottle cap, cork-lined		2						3
Stove parts?								7
Cast iron kettle (?), rim frag.					1			
Chisel or crowbar								
Spike or tool point	1							
Folding pocket knife handle w/wood	1							
Unidentified receptacle frag.	1							
Unidentified	1	1						
Unidentified corrosion lumps	37	76	14		2	1		62
Metal, copper alloy								
Wire			1					
Pipe flange, round	1							
Arrow tip (?)	1							
Rivet	1							
Lamp tube holder	1							
Tag w/initials (meal tag?)	1							
Unidentified	1							
Metal, lead								
Lead cap w/iron lining			1					
Lead strip		1						
Metal, gold-plated								
Finger ring, gold-plated copper	1							
Slag		2						14
Wood								
Charcoal	3	5					1	
Pencil	1	1						
Unidentified frag.	4	8		5				
Leather								
Shoe sole frag.								1
Unidentified		3		1				

APPENDIX C, cont'd.

TRENCH 1 EAST, cont'd.

Object	Level 3	4	5	7	8	10	Feature 1	Feature 8
Bone								
Faunal [not analyzed]			5					
Calcaneous, *Ovis*		1						
Vertebra		1						
Calcined		1						
Unidentified		12						
Textile								
Ribbon, black hat band		3						
Plastic								
Cellophane	1							
Comb, composition, woman's hair	1							
Comb, black		1						
Fan part?		1						
Buttons								
Ceramic, white, 2 holes	1							
White porcelain collar	1							
White porcelain, 4 holes		1						
White porcelain, broken		1						
Glass collar		1						

APPENDIX C, cont'd.

TRENCH 1 WEST

Object	Level 3	4	5
Stone			
Slate roofing tile frag.		11	
Coal	3	3	
Unidentified	1		
Mortar	4	3	
Glass			
Window, .10 cm thick			1
Window, .15 cm thick	30	22	
Window, .20-.25 cm thick	59	34	2
Bottle, clear body/base frag.	75	1	
Bottle, clear, embossed base frag.		1	
Bottle, clear lip/neck frag.	2		
Bottle, manganese body frag.	1	2	
Bottle, aqua body frag.	2	1	1
Bottle, aqua base frag.		2	
Bottle, aqua, embossed body frag.		1	
Bottle, aqua base frag.		2	
Bottle, brown body frag.	8	1	
Bottle, amber strap-sided, body	5		
Bottle, green body frag.		1	
Bottle top, aqua		2	
Tumbler, clear rim frag.	1		
Other Container, clear body frag.		54	
Other Container, clear body frag., emb.	3		
Other Container, green body frag.	1		
Other Container, blue body frag.	2	4	
Other Container, manganese body frag.	5		
Other Container, brown body frag.			1
Milkglass, rim frag.		1	
Milkglass, body frag.		2	
Milkglass, base frag., jar		1	
Lamp chimney, clear	7	7	
Mirror		3	
Ceramic			
Brick frag.	3	2	
Redware, unglazed body frag.	1		
Redware, green glaze, rim frag.		1	
Earthenware, buff-body, body frag.	2		
Earthenware, drainpipe body frag.		1	
Creamware, rim frag.	1		
Pearlware, body frag.	2	4	
Pearlware, blue edge, rim frag.		4	
Pearlware, hand painted, body frag.	1		
Pearlware, hand painted, body/rim frag.		4	

APPENDIX C, cont'd.

TRENCH 1 WEST, cont'd.

Object	Level 3	4	5
Ceramic, cont'd.			
Whiteware, plain, body/base frag.	8	14	
Whiteware, plain, rim frag.		7	
Whiteware, annular rim frag.		2	
Whiteware, hand painted, body frag.		1	
Whiteware, hand painted, rim frag.	1		
Whiteware, blue TP body frag.		2	
Whiteware, pink TP body frag.	1		
Whiteware, green TP handle frag.	1		
Whiteware, yellow TP, rim frag.		1	
Whiteware, flow blue TP, rim frag.	1		
Stoneware, grey w/Albany slip int. body frag.		1	
Porcelain, gold overglaze rim frag.		2	
Porcelain, molded rim frag. (softpaste?)		1	
Porcelain, undec. base frag.		1	
Tobacco Pipe, white clay			
Bowl frag.		4	
Stem frag., 4/64"	1	4	
Stem frag., 5/64"	1		
Bowl/stem frag. (mended), 4/64"		1	
Metal, iron			
Nails, cut	3	1	
Nails, wire		1	
Crown bottle cap, cork-lined		1	
Brooch w/blue glass inset	1		
Unidentified circular object	1		
Unidentified corrosion lumps	12	48	
Metal, copper alloy			
Doorknob escutcheon		1	
Coin or button? (needs conservation)		1	
Metal, lead			
Lead scraps	2		
Slag	5		
Wood			
Charcoal		1	
Buttons			
White porcelain w/metal eye	1		
Glass, stamped geometric design, /metal eye		1	

APPENDIX C, cont'd.

TRENCH 1 EAST/WEST

Object	Level 3	4	5
Stone			
Coal	4		
Glass			
Window, .20-.25 cm thick		2	
Window, >.25 cm thick	369		
Bottle, clear body frag.	100		
Bottle, clear base frag.	6		
Bottle, clear, embossed body frag.	8		
Bottle, clear lip/neck frag.	4		
Bottle, manganese body frag.	5		
Bottle, pink body frag.	2		
Bottle, dark brown body/base frag.	14		
Bottle, light brown, sideseam, body frag.	29		
Bottle, blue body frag.	4		
Bottle, blue rim frag.	1		
Bottle, blue, embossed body frag.	1		
Bottle, green body frag.	3		
Bottle, dark green body frag.	1		
Tumbler, clear rim frag., incised dec.	2		
Canning jar, clear body frag.	1		
Canning jar, clear rim frag.	3		
Milkglass, body frag.	13		
Lamp chimney, clear	1	1	
Lamp chimney, light green	2		
Lamp chimney, clear, scalloped rim frag.	1		
Ceramic			
Brick frag.	1	1	
Redware, unglazed body frag. (flowerpot)	2		
Redware, unglazed rim frag. (flowerpot saucer)	1		
Redware, glaze chipped off, body frag.	7		
Redware, brown [lead] glaze, body frag.	4		
Earthenware, slip dec., buff-body, body frag.	1		
Earthenware, white paste, green/pink glaze	1		
Earthenware, burned body frag. [spittoon]	8		
Creamware, body/base frag.	5		
Pearlware, body frag.	29		
Pearlware, rim frag.	3		
Pearlware, blue TP body frag.	9		
Pearlware, blue TP rim frag.	3		
Whiteware, plain, body frag.	87		
Whiteware, plain & dec., rim frag.	38		
Whiteware, annular body frag.	1		
Whiteware, hand painted, body frag.			1
Whiteware, blue TP body frag.	7		
Yellow ware, body frag.	8		
Stoneware, grey body frag.	7		
Porcelain, undec. body frag.	11		
Porcelain, molded body frag.	4		
Porcelain bisque figurine frag.	13		
Crown bottle cap seat, cobalt blue	1		

APPENDIX C, cont'd.

TRENCH 1 EAST/WEST, cont'd.

Object	Level 3	4	5
Tobacco Pipe, white clay			
Bowl frag.	1	1	
Stem frag., 4/64"	6		
Stem frag., 4/64", W. White/Glasgow/Scotland	2		
Stem frag., 5/64"	3		
Metal, iron			
Nails, cut	2		
Nails, wire	7		
Nails, horseshoe	2		
Nails, unidentified frags.	6		
Tack, round head	1		
Sheet metal, folded frag.	11		
Crown bottle cap	1		
Bottle cap seal (sheet metal or tin?)	1		
Spike (?)	1		
Bolt frag., threaded	1		
Wall hook (coat?)	1		
Unidentified semicircular frag. (drawer pull?)	1		
Unidentified object	1		
Unidentified corrosion lumps	3	4	9
Metal, lead			
Seal	1		
Metal, other			
Seal, zinc	1		
Battery terminal, carbon	1		
Unidentified circular object	1		
Fuse, metal w/blue plastic ("BUSS/ATC")	1		
Slag	3		1
Bone			
Faunal (not analyzed)	3		3
Distal tibia, *Ovis,* sawn		1	
Proximal femur, *Bos,* sawn		1	
Buttons			
Ceramic, black, 4 holes	1		
Ceramic, white, 4 holes	1		
Ceramic, white, broken	1		
Ceramic, cream-colored, broken	1		
Marbles			
Red clay	1		
White clay	1		
Electrical Wiring			
Cloth-covered w/metal casing at end	1		

TRENCH 2 EAST

Object	Level 2	5	10	NP	Feature/Level 3/8	3/8A	6/6	6/11	6/PTF	Feature 13
Stone										
Red slate roofing tile frag.		1							1	
Blue/grey slate roofing tile frag.						1				
Quartz chip						1				
Coal							1		1	
Mica							1			
Plaster		1	1							
Mortar			6			9	20			
Glass										
Window, .30 cm thick										3
Window, .25 cm thick		16		1	2			16	2	9
Window, .20 cm thick		44	64	1	4	17	17	17	5	
Window, .15 cm thick		5				23	18	17	4	17
Window, .20 cm thick, frosted		2								
Window, .15 cm thick, frosted		1								
Window, ribbed										3
Tube, clear, eye dropper frag.?			1							
Bottle, clear pharmaceutical			2							
Bottle, clear body frag.		62	51	3	7	1	23	38	10	83
Bottle, clear base frag.		1	1			1		2		
Bottle, clear, embossed body frag.		1	4			2	2	1	8	
Bottle, clear lip/neck frag.		2	5			1	3	2		16
Bottle, clear w/green tint, body frag.		3								
Bottle, manganese body frag.							2			
Bottle, manganese body frag., embossed	1									
Bottle, mang. embossed strap flask		24								
Bottle, lt. brown body frag.		4	3	2			2	1	1	1
Bottle, lt. brown crown lip frag.			1							
Bottle, dark brown body frag.			6							
Bottle, dark brown lip/neck frag.			1							
Bottle, brown, embossed body frag.						1				
Bottle, aqua body frag.		8	3	1	1	2	13	8		
Bottle, aqua body frag., embossed		1								
Bottle, aqua lip/neck frag.		1						3		1
Bottle, aqua base frag.								2		
Bottle, blue body frag.		1								
Bottle, yellow body frag.			1							
Bottle, green string rim frag.							1			
Bottle, dark green body frag.			1			3	2			
Bottle, pale green, threaded rim			1							
Tumbler, clear rim frag., incised dec.	1		1							
Tumbler, clear body frag.		2								
Tumbler, clear, rim frag.			1				1			

TRENCH 2 EAST, cont'd.

Object	Level 2	5	10	NP	Feature/Level 3/8	3/8A	6/6	6/11	6/PTF	Feature 13
Glass, cont'd.										
Tumbler, clear, molded dec., body frag.	1									
Tumbler, manganese body/base frag.	1					2				
Milkglass container body frag.									1	
Milkglass, rim frag.		1								
Container, clear, body frag.							1			
Lamp chimney, clear body frag.		9	13		2	2	7	30	7	6
Lamp chim., clear, scalloped rim frag.	2					2	1	1		
Lamp chim., clear base frag.								1	1	
Lamp or figurine?, opaque green frag.						2				
Ceramic										
Brick frag.						2			2	
Redware, unglazed base frag. (flowerpot)	2						1			
Redware, unglazed rim frag. (flowerpot)	3									
Redware, unglazed body frag.			1					1		
Redware, int. glazed, body frag.				1						
Earthenware drain pipe frag.		9					7	1		
Earthenware, unglazed buff body frag.			1							
Earthenware, crock rim, clear glaze, buff body							1			
Earthenware, Bennington-type, rim frag.							1			
Cream colored, body frag.		1								
Creamware, plain body frag.				4						
Creamware, plain rim frag.				1						
Creamware, brown TP rim frag.				1						
Creamware, brown TP body frag.				8						
Creamware, brown TP base frag.				3						
Pearlware, rim frag.				1						
Whiteware, plain, body frag.		9		2			10	8	5	
Whiteware, plain, rim frag.		5		1	1		3	1	3	3
Whiteware, plain base frag.				1						
Whiteware, plain cup frags.		6								
Whiteware, molded dec., cup frags.	6									
Whiteware, hand painted, body frag.	2		2							
Whiteware, green TP/hand ptd. rim frag.						1				
Whiteware, blue shell-edge body frag.				1						
Whiteware, brown TP body frag.		1					2	2		
Whiteware, brown TP rim frag.		1								
Whiteware, red TP body frag.							1			
Whiteware, red TP rim frag.								1		
Whiteware, gold overglaze TP body frag.	1						1			
Ironstone, plain body frag.								1		
Ironstone, plain, rim frag.						1	1	3		
Stoneware, grey/Albany slip, body frag.	1		1				1			
Stoneware, grey/Albany slip, base frag.	1									
Stoneware, brown-glazed body frag.						1				
Stoneware drain pipe frag.				1						
Porcelain, undec. rim frag.		1								
Porcelain, molded rim frag., polychrome		1								
Porcelain decalomania body frag.								1		

TRENCH 2 EAST, cont'd.

Object	Level 2	5	10	NP	Feature/Level 3/8	3/8A	6/6	6/11	6/PTF	Feature 13
Tobacco Pipe, white clay										
Bowl frag.		2	3			1		3	2	
Stem frag., 4/64"			2				2		1	
Stem frag., 4/64", [Mc]DOUGALL		1					2			
Stem frag., 5/64"									1	
Metal, iron										
Nails, cut						3				
Nails, unidentified frags.			3					3		
Tin can frag.						17				
Wood-handled utensil						1				
Unidentified wheeled object		1								
Unidentified object	1					1	1			
Unidentified corrosion lumps		5	41		3		26		5	4
Metal, copper alloy										
Cartridge, Berdan type?, frag.		1								
Cap-like object, incomplete			1							
U-shaped object, lamp frag.?					1					
Cufflink?						1				
Unidentified object, semicircular							1			
Unidentified frag.			2							
Metal, lead										
Strip					2					
Lead sheet, twisted									1	
Wire? (soldered to cement)										1
Slag		1			2		5	1		8
Wood										
Corks			2							
Unidentified frag.								2		
Leather										
Unidentified frag.								3		
Shell										
Clam			4							
Snail						1				
Unidentified frag.		1					4	1		
Bone										
Unidentified bone object		1								
Faunal (frags. not analyzed)						3	3			14

APPENDIX C, cont'd.

TRENCH 2 EAST, cont'd.

Object	Level 2	5	10	NP	Feature/Level 3/8	3/8A	6/6	6/11	6/PTF	Feature 13
Buttons										
Ceramic, white, 4 holes		1	1				1	1		
Glass, clear, 2 holes							1			
Glass, clear, metal eye missing									1	
Plastic w/metal, cream-colored		1								
Marbles										
White clay		1								
Plastic										
Hair comb, dark brown/black			1							
Coins										
Liberty Head Dime, 1899										1

† Final cleaning, no provenience.
* Pipe trench fill.

APPENDIX C, cont'd.

TRENCH 2 WEST

Object	Level 3	4	5	Feature/Level 7/7	7/7A	7/7B	7/7C
Stone							
Slate			1				1
Limestone				1			
Coal		2		1			
Unidentified rock						1	
Mortar	1				3	1	1
Glass							
Window, .20-.25 cm thick	250	34	65	23	12	5	2
Window, safety				1			
Bottle, clear, ca. 7.2 cm tall			1				
Bottle, clear body frag.	39	4	11	1			
Bottle, clear lip/neck frag.	1			2			
Bottle, clear base frag.	3						
Bottle, brown body frag.	2			1			
Bottle, cobalt blue body frag.	1						
Bottle, cobalt blue neck frag.			1				
Bottle, pale green neck frag.			1				
Bottle, olive green body frag.	1		1				
Bottle, light green body frag.	10						
Bottle, light green base frag.	1						
Bottle, bright green body frag.	2						
Bottle, aqua body frag.			7				
Tumbler, clear rim frag., incised dec.			2				
Tumbler, clear rim frag.	1						
Tumbler, violet tint rim frag.			1				
Wineglass, clear, ribbed dec.	1						
Lamp chimney, clear body frag.	14	4	18	16	1	1	
Lamp chimney, clear rim frag.			5			2	
Lamp chimney, clear, scalloped rim frag.			1	1			
Ceramic							
Brick frag.					2	2	4
Ceramic utility pipe frag.	2						
Redware, unglazed body frag. (flowerpot)	3	6	2				
Redware, unglazed rim frag. (flowerpot)				1			
Redware, glaze chipped off, body frag.	1	2	3	3			
Redware, brown glaze int., body frag.	1		2				
Redware, green glaze, body frag.	1			2			
Redware, green glaze, rim frag.	1	1					
Earthenware, pale blue glaze chip				1			
Earthenware, pale blue w/annular dec., rim				1			
Creamware body frag.	4				1		
Pearlware, base frag.				2			
Whiteware, plain, body frag.	13	3		4	2	1	2
Whiteware, plain rim frag.	6	3	2	1			
Whiteware, plain base frag.				1		1	
Whiteware, plain glaze chip		1	3	8			
Whiteware, annular body frag.	1		2		2		
Whiteware, annular rim frag.						1	

TRENCH 2 WEST, cont'd.

Object	Level 3	4	5	Feature/Level 7/7	7/7A	7/7B	7/7C
Ceramic, cont'd.							
Whiteware, blue TP body frag.	1		1			1	
Whiteware, blue TP rim frag.		1					
Whiteware, brown TP body frag.	3					1	
Whiteware, brown TP rim frag.	1			1			
Whiteware, black TP rim frag.				1			
Whiteware, green TP body frag.	1	1					
Whiteware, green TP rim frag.			1				
Whiteware, hand painted, body frag.			1	4		1	
Whiteware, hand painted, rim frag.			1	3			
Yellow ware, body frag.				3			
Yellow ware, glaze chip			1				
Stoneware, grey rim frag.			1				
Stoneware, grey/Alb. slip body frag.		1					
Porcelain, soft-paste, undec. rim frag.	2						
Porcelain insulator frag.	1						
Porcelain collar stay			1				
Tobacco Pipe, white clay							
Bowl frag.			1	2			
Stem frag., 4/64"	2		1				
Stem frag., 4/64", DAVIDSON/GLASGOW			1	1			
Stem frag., 5/64"	1						
Stem frag., broken				1			
Metal, iron							
Nails, cut				7			
Nails, wire		1					
Nails, unidentified frags.	15	3	20	9	8	8	
Crown bottle cap?, corroded		1					
Spike	4					3	
Wire frag.	2						1
Stopper frag.	1						
Cylinder (tin ferrule?)	1						
Washer or nut	1						
Hinge frag.	1						
Door latch piece	1						
Unidentified corrosion lumps					2	3	1
Metal, copper alloy							
Corroded frag., cap or tip of object						1	
Metal, lead							
Lead strip	1						
Slag	2						1
Wood							
Unidentified frag.	3	1		1		1	

APPENDIX C, cont'd.

TRENCH 2 WEST, cont'd.

Object	Level 3	4	5	Feature/Level 7/7	7/7A	7/7B	7/7C
Textile							
Miscellaneous scraps			25				
Leather							
Miscellaneous frags.						2	
Shell							
Oyster	10	1					6
Seeds							
Peach pit frags.	2						
Bone							
Toothpick frag.						1	
Faunal (frags. not analyzed)	1			3	2	2	
Marbles							
White clay						1	
Plastics							
Calendar card, blue, dated 1898			1				
Curved light blue frags.				2			
Oblong red frag.	1						
Asbestos shingle frag., blue	2						
Coins							
Lincoln-head penny, corroded	1						

APPENDIX C, cont'd.

TRENCH 2 WEST, cont'd.
Feature 10

Object	Feature/Level 10	10/12	10/12A
Stone			
Slate roofing tile frag.		5	3
Coal		2	
Quartz crystal		1	
Glazing/caulking		6	
Glass			
Window, .20 cm thick	1	10	2
Bottle, clear body/base frag.		2	
Lamp chimney, clear		1	6
Mirror			
Ceramic			
Brick frag.		11	4
Redware, unglazed body frag.	1	4	2
Redware, brown glaze int., body frag.	1	1	
Pearlware, body frag.		1	
Pearlware, blue edge, rim frag.		1	
Pearlware, base frag.		2	
Pearlware, black TP body frag.		1	
Pearlware, blue/brown hand painted body frag.		1	
Whiteware, plain, body/base frag.	1	4	3
Whiteware, plain, rim frag.			2
Whiteware, annular body frag.		1	
Whiteware, blue edge dec., rim frag.			1
Whiteware, blue TP body frag.			1
Whiteware, brown TP body frag.		1	
Yellow ware body frag.		2	1
Tobacco Pipe, white clay			
Bowl frag.		2	
Metal, iron			
Nails, unidentified		14	7
Unidentified corrosion lumps		3	
Metal, copper alloy			
Tack		1	
Unidentified circular object (snap?)		1	
Wood			
Pointed wooden objects		11	
Miscellaneous frags.		54	
Leather			
Unidentified frag.		1	

TRENCH 2 EAST/WEST

Object	Level 5	Feature/Level 2/9	2/9A	2/9B†	2/9B	2/9C	2/9D
Stone							
Red slate frag.		1	1				
Blue grey slate frag.		1		1	14	2	3
Quartz					1		
Coal	12		4			3	2
Hot-top frag.			1				
Coke?			1				
Chalk					2		
Graphite					1		
Unidentified rock					1		
Mortar					41	2	3
Plaster							8
Glass							
Window, .30 cm thick			13				
Window, .25 cm thick			125				
Window, .20 cm thick	21	31		13	375	117	138
Window, .15 cm thick	76	2	219				
Window, .3 cm thick		1					
Window, .2 cm thick		14					
Window, ribbed		1					
Window, ribbed, manganese			4				
Mirror frag.	1		1				
Vial, clear glass					1		
Bottle, clear body frag.	86	5	31	5	115	1	75
Bottle, clear, embossed body frag.	7						
Bottle, clear base frag.	2				6	1	3
Bottle, clear, embossed frag.	1				3	1	6
Bottle, clear lip/neck frag.	2			1	2		1
Bottle, manganese body frag.	1						
Bottle, aqua body frag.	11	2	4				2
Bottle, aqua base frag.							1
Bottle, aqua base/body, embossed	2						1
Bottle, brown body/base frag.	13		3		4		
Bottle, blue body frag.	1						
Bottle, green body frag.	1			1	32	1	11
Bottle, green lip/neck frag.					1		
Bottle, green base frag.					6		
Bottle, dark green body frag.						1	
Milk bottle, clear lip frag.						23	
Jar, manganese lip frag.			1				
Jar, aqua lip frag.						6	
Canning jar, clear body frag.					3		
Canning jar, clear rim frag.					1		1
Canning jar, aqua base frag.						1	1
Container, clear body frag.		2				59	
Container, clear lip/rim frag.			1		1	5	

TRENCH 2 EAST/WEST, cont'd.

Object	Level 5	Feature/Level 2/9	2/9A	2/9B†	2/9B	2/9C	2/9D
Glass, cont'd.							
Container, clear base frag.	7		1				
Cont., clear pressed body frag.	1						
Container, aqua body frag.						60	
Container, manganese body frag.			3			1	
Container, brown body frag.						1	
Tumbler, clear body frag., incised dec.				1	2	2	
Tumbler, clear rim frag.					2	2	3
Tumbler, clear base frag., ribbed							2
Beer mug, aqua glass						1	
Stemware, clear pressed, heart design						1	
Stopper, clear glass, octagonal							1
Milkglass, white body frag.	2				1		
Milkglass, white rim frag.						1	
Milkglass, lt. green body frag.							1
Eyeglass (?), curved aqua frag.	2						
Lamp chimney, clear	22		4	4	32	17	22
Lamp chim., clear, scalloped rim 1		2		3	1		
Ceramic							
Brick frag.				1	4		1
Redware, unglazed body frag. (flowerpot)				3	1		
Redware, unglazed rim frag. (flowerpot)				1	1	1	
Redware, brown [lead] glaze, body frag.				1			
Earthenware, buff-body, body frag.				2		2	
Earthenware, buff-body, rim frag.						1	
Earthenware, crude blue glazing							1
Pearlware, blue TP rim frag.				1			
Whiteware, plain, body frag.	9	1	4	1	48	16	15
Whiteware, plain rim frag.	2		1	1	11		10
Whiteware, plain base frag.	2				7	4	9
Whiteware, plain handle frag.				1	1		
Whiteware, molded rim w/gilding	2						
Whiteware, blue sponge dec., body				2			
Whiteware, blue sponge dec., rim					1		
Whiteware, blue edge dec., rim frag.				1			
Whiteware, blue TP body frag.						1	
Whiteware, Blue Willow TP rim frag.					13		
Whiteware, brown TP body frag.	1				1	1	1
Whiteware, brown TP rim frag.	3				1		
Whiteware, red TP rim frag.							1
Whiteware, polychrome TP body frag.					1		
Yellow ware, body frag.						1	1
Stoneware, wt. ext. glaze w/lettering		1					
Stoneware, grey body frag.	4		1			1	
Stoneware, grey/Albany slip body 1							
Stoneware, dk. brown glaze one side					2		
Porcelain, undec. body frag.	2						
Porcelain, undec. rim frag.	1						

APPENDIX C, cont'd.

TRENCH 2 EAST/WEST, cont'd.

Object	Level 5	Feature/Level 2/9	2/9A	2/9B†	2/9B	2/9C	2/9D
Tobacco Pipe, white clay							
Bowls & bowl frag.	8				18	4	3
Stem frag., 4/64"					4	1	3
Stem frag., 4/64", [McD]OUGALL/SCOTL[AND]							1
Stem frag., 5/64", McD[OUGAL]/[SCOTLA]ND					1		
Stem frag., 5/64", GOUDA/HOLLAND					1		
Stem/bowl frag., 5/64", GERMA[NY?]						1	
Stem frag., 5/64"					1		
Metal, iron							
Nails, cut						4	2
Nails, wire	1					1	
Nails, unidentified frags.				3	48	37	29
Spike				1			5
Needle (?)							1
Cast-iron kettle, pot frag.					17		
Hook							1
Washer (?)					1		1
Milk bottle cap frag.					1		
Bottle cap							4
Crown bottle cap						5	1
Can top							5
Tin can frag.							55
Jar lid. frag. (canning type)							3
Pipe frag. (from well pump?)					1	8	
Pipe cap							1
Tubular frag.					1		
Spoon bowl (?)	1						
Ring, harness-type					1		
Wire ring frag.						4	
Wire frag.						2	1
Poker frag.						1	
Cast-iron fireplace grate frag.						1	
Unidentified iron strip (handle?)				1			
Unidentified bar-like object	1						
Unidentified object				1	1		
Unidentified corrosion lumps	33	2	3	17	39	22	6
Metal, copper alloy							
Wire (electrical?), tar-coated			1				
Pipe flange frag.					3		
Washer frag.						2	
Snap (w/wt. enamel coating)						2	
Cap or plug						1	
Unidentified object				1			
Slag	4			2	11		1

TRENCH 2 EAST/WEST, cont'd.

Object	Level 5	Feature/Level 2/9	2/9A	2/9B†	2/9B	2/9C	2/9D
Wood							
Cork frag.	1				1		
Charcoal					9		
Miscellaneous frags.	--		4	1	40	24	10
Leather							
Shoelace frag.						2	
Shoe heel frag.						1	
Miscellaneous frags.	2				7	1	1
Textile							
Ribbon, black grosgrain (hatband?)						1	
Shell							
Tortoiseshell comb tine	1						
Oyster shell frag.					1	1	
Unidentified frag.	2						
Bone							
Faunal (not analyzed)					12	1	4
Scapula, cf. *Ovis*							1
Rib, cf. *Bos*, cut (?)					1		
Buttons							
Ceramic, white, 4 holes						1	
Ceramic, white, collar					1		
Copper alloy, iron eye	1						
Shell, two holes (?)	1						
Marbles							
Red clay					1		
Paper							
Tar paper frag.					2		
Plastic							
Insulating tube frag.						1	
Brown decorative hair comb							2
Coins							
Copper, corroded, pennies?					2		

† cleanup above iron pipe

TRENCH 3

Object	Level 2	E3	W3	E4	W4	E5	W5	W6	W7	Feature 14
Stone										
Slate		2				2				
Mica	1									
Coal		1	4	1			1	3		1
Mortar		8	2	1	3	4			2	
Glass										
Window, .20-.25 cm thick		55	34		19	14	2	1	5	1
Window, safety		1								
Bottle, clear body frag.		26	27	1	4	13				
Bottle, clear lip/neck frag.			1				1			
Bottle, brown body frag.		5	3			3	1	1		
Bottle, olive green body frag.										1
Bottle, light green body frag.			2							
Bottle, bright green body frag.		1	2			1				
Jar, clear body/base frag.		1	1							
Bowl, clear body/base frag.			2							
Tumbler, clear rim frag., incised dec.		3								
Milkglass frag.		9	3			1	1			
Lamp chimney, clear body frag.			2						5	
Ceramic										
Brick frag.		2	3	1		2				
Ceramic utility pipe frag.		1	1							
Redware, unglazed rim frag.		1								
Earthenware, pink body, handle frag.		1								
Whiteware, plain, body frag.		13	9	2		13				
Whiteware, plain rim frag.		1	3			5		1		
Whiteware, plain base frag.		4				1				
Whiteware, annular body frag.			1							
Whiteware, blue TP body frag.		1	2							
Whiteware, brown TP body frag.									1	
Whiteware, brown TP rim frag.						1				
Whiteware, black TP body frag.						2				
Whiteware, green TP body frag.		17		3						
Whiteware, green TP rim frag.			1			1				
Yellow ware, body frag.		3								
Stoneware, wt./brown body frag.	1	1								
Porcelain, soft-paste figurine frag.		1								
Tobacco Pipe, white clay										
Stem frag., 4/64"		1								
Metal, iron										
Nails, cut		1								
Nails, wire		1								

APPENDIX C, cont'd.
TRENCH 3, cont'd.

Object	Level 2	E3	W3	E4	W4	E5	W5	W6	W7	Feature 14
Metal, iron, cont'd.										
Nails, unidentified frags.		10	16	6	30	17	27	7	21	1
Corroded iron strip frags.	3									
Spike		1	3				4			
Iron ring, thin			1							
Buckle, harness-type							1			
Rod or clamp part (?)		1								
Door latch piece		1								
Spark plug w/ceramic part		1								
Unidentified object		1								
Unidentified corrosion lumps		3	6				3	2		
Metal, zinc										
Corroded screw cap frag.							1			
Collar button (?)									1	
Metal, lead										
Lead frag.		2							1	
Slag		15	9				1	7	1	1
Wood										
Unidentified frag.		1	2			6		4		2
Leather										
Miscellaneous frags.						1		2		
Shell										
Oyster										1
Seeds										
Peach pit frags.			1							
Bone										
Radius frag., *Ovis*, distal shear						1				
Rib frag., cf. *Bos*, saw marks						3				
Rib frag., cf. *Bos*, shear marks						1				
Cranial frag., mammal						2				
Vertebra frag., *Melegris*						1				
Proximal femur, shear and saw marks									1	
Scapula frag., *Ovis*									1	
Rib frag, rodent-gnawed									1	
Radius, *Gallus*									1	
Distal tibia, cf. *Gallus*, shear marks									1	
Unid. *Aves* bones									3	
Vertebrae, unfused									2	
Ankle bone, *Ovis*									1	
Misc. rodent bones									4	
LBN shaft frags.									11	
Unidentifiable frags.									36	
Faunal (frags. not analyzed)			1			6	9		18	

APPENDIX C, cont'd.

TRENCH 3, cont'd.

Object	Level 2	E3	W3	E4	W4	E5	W5	W6	W7	Feature 14
Marbles										
White clay			1							
Red and white glass			1							
Plastics										
Red frag.		1								
Reddish-pink frag.			1							
Tarpaper										
Miscellaneous frags.		5					2		2	
Button										
Milkglass									1	

TRENCH 4

Object	Level 3	E4	W4	E5	W5
Stone					
Slate	1				
Coal	7	1	1		
Glass					
Window, .20-.25 cm thick	226	10	7		3
Bottle, clear body frag.	31	1	2		
Bottle, clear lip/neck frag.	1		1		
Bottle, clear base frag.	5				
Bottle, brown body frag.	13				1
Bottle, light blue body frag.		1		1	
Bottle, cobalt blue body frag.		1			
Bottle, olive green lip/neck frag.		1			
Bottle, light green body frag.		1			
Bottle, bright green body frag.	3	1			
Bottle, aqua body frag.	1		7		
Bottle, aqua rim frag.			1		
Bottle, violet body frag.	1				
Bottle, yellow body frag.	1				
Jar, clear rim frag.	3				
Tumbler, clear rim frag.		1			
Milkglass frag.	5				
Lamp chimney, clear body frag.	1		1		
Ceramic					
Brick frag.	1		2		
Ceramic utility pipe frag.			1		
Redware, unglazed body frag. (flowerpot)			9		8
Redware, unglazed rim frag. (flowerpot)		4			
Redware, unglazed base frag.	1		1		
Redware, brown glaze body frag.	1	2			
Earthenware, blue glaze	2				
Earthenware, brown/wt. glaze	1				
Pearlware, polychrome body frag.	4				
Pearlware, blue TP body frag.		1			
Whiteware, plain, body frag.	21		1	2	
Whiteware, plain rim frag.	7			1	1
Whiteware, plain base frag.	3				
Whiteware, plain handle frag.			1		
Whiteware, blue TP body frag.	3	2			
Whiteware, brown TP body frag.	1	1			
Whiteware, brown TP rim frag.			1		
Whiteware, green TP body frag.		1			
Whiteware, polych. body frag.	1				
Yellow ware, body frag.			1		
Stoneware, white	2				
Stoneware, grey/br. body frag.	1				
Porcelain, brown glaze (figurine frag.?)				1	
Porcelain doll's arm	1				
Porcelain fixture frag.	1				
Porcelain, soft-paste	4				

TRENCH 4, cont'd.

Object	Level 3	E4	W4	E5	W5
Tobacco Pipe, white clay					
Stem frag., 4/64", W.WHITE/GLASGOW			1		
Stem frag., 6/64", BOSTON/St & C	1				
Stem frag., broken	1				
Metal, iron					
Nails, unidentified frags.	30	6	6		
Spike	12				
Iron gridwork frags.	192				
Spring	2				
Iron plate (stove part?)	1				
Ring	1				
Jar top, threaded	1				
Unidentified corrosion lumps				2	
Metal, lead					
Gear for toy	1				
Slag	2		1		
Leather					
Miscellaneous frags.	2				
Shell					
Oyster	5				

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North Atlantic Regional Office, National Park Service

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